

Vol. 2, No. 1
August 1952
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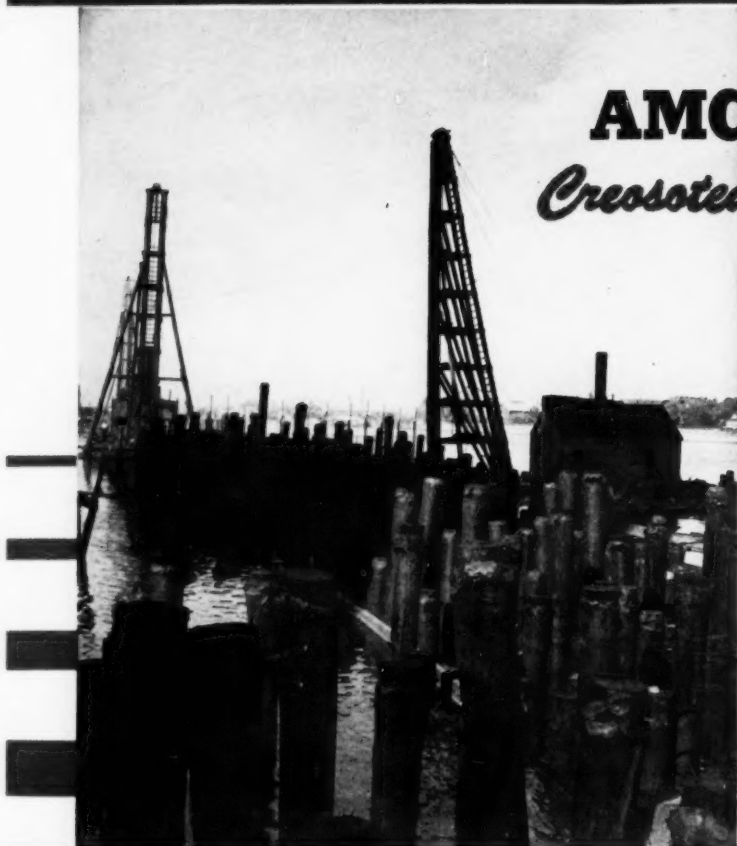
Horizontal shovel, powered by Caterpillar Diesel 571000 engine, loads rock on highway reconstruction project between Martinsburg and Artois, West Virginia. Kelley Construction Co., of Clarksburg, is the contractor.

AUGUST 1952

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The CONSTRUCTION magazine is published in four editions: C edition is for North Carolina and South Carolina; S edition, Alabama, Florida, Georgia and Tennessee; N edition, Kentucky, Maryland, Virginia and West Virginia; W edition, Arkansas, Louisiana, Mississippi, Missouri, Oklahoma and Texas.



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AUGUST, 1952

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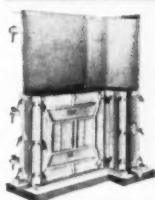


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**Fabricated and erected by American Bridge, the new Hackensack River Bridge on the recently opened N. J. Turnpike is co-holder of the record for the country's longest plate girder main spans.*

THE completion of the Hackensack River Bridge near Laurel Hill, New Jersey, by American Bridge, and the Passaic River Bridge by another contractor, permitted the opening of the final nine-mile section of the 118-mile New Jersey Turnpike. These two bridges with main spans of 375 ft. set a new U.S. record for lengths of plate girders.

The Hackensack River Bridge has a total length of 5613'3" c. to c. of end bearings on abutments and provides six 12 ft. traffic lanes, a 6 ft. center mall and two 3 ft. safety walks. The 375 ft. main span with two flanking spans of 275 ft. each, c. to c. of bearings, are composed of two continuous girders spaced 56' apart with a maximum depth of 21'6 1/2" b. to b. of flange angles over the piers.

The south approach contains a 5000 ft. radius curve and the north approach a 4000 ft. radius curve. The spans on curves are super-elevated and both approaches are on a 3 1/4% grade with a 940 ft. length vertical curve symmetrical about the center of the river span. Silicon steel was used for all main girder material.

The New Jersey Turnpike now provides another link in the envisioned north-south expressway and extends from the Delaware Memorial Bridge below Wilmington, Delaware, to connections with the main crossings of the Hudson River to New York—the Holland and Lincoln Tunnels and the George Washington Bridge.

The over fifty years of bridge building experience, the technically trained personnel, the most modern equipment of American Bridge, were needed to build a bridge of this magnitude, again living up to its old motto, "If the engineers can design it, American Bridge can build it."

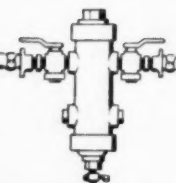
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Maryland Dedicates Bay Bridge



Above — Official motorcade proceeds across the \$45,000,000, four-mile long Chesapeake Bay bridge, during the dedication ceremonies held July 30. A tower of the 1,600-foot suspension span rises in the background. Bethlehem Steel Co., contractor for the superstructure, floated 21 of the structure's big truss spans into place, marking it as history's largest flotation job.

Below—Gov. Theodore R. McKeldin of Maryland cuts one of the twin ribbons during the opening ceremony. At his left, former governor, William Preston Lane, Jr., in whose administration the project was started, is shown preparing to cut a second ribbon. Mrs. Lane looks on. Superstructure of the bridge, which connects Maryland's eastern and western shores for the first time, contains 33,000 tons of steel furnished and erected by Bethlehem.



Maryland's \$45,000,000 bridge, which arcs slightly over four miles across the Chesapeake Bay between Sandy Point, on the western shore, and Stevensville, an island town just off the eastern shore, was officially dedicated at the end of last month, with Gov. Theodore R. McKeldin giving his predecessor, William Preston Lane, Jr., full credit for initiating the project.

Participating in the ceremonies also were Gov. Elbert N. Carvel, of nearby Delaware, Russell H. McCain, chairman of the Maryland State Roads Commission, Mayor Thomas D'Alesandro, of Baltimore, representing the western shore, State Comptroller J. Millard Tawes, acting for the eastern shore, and Hershel Allen, head of the J. E. Greiner Co., Baltimore consulting engineering firm

which made the designs and supervised construction.

The ceremony marked the end of two and one-half years of construction involving fabrication of the 123-span structure from 17,500 tons of steel piling, 42,500 tons of structural and other steel, 118,000 cubic yards of cement concrete, 2,358,000 cubic yards of earth and 151,400 tons of sloop protection stone.

Several kinds of construction are involved. At the shore ends are the beam and girder spans. Starting from the east is a through cantilever design, deck cantilevers, a suspension bridge, more deck cantilevers and then a truss design. The 1,600-foot suspended span across the Bay's main ship channel and clears the water by 186 feet. The 780-foot truss span over the eastern channel has a vertical clearance of 63 feet.

The Maryland State Road Commission estimates that one of each two dollars spent for the \$45,000,000 bridge went for the underwater work, including dredging, driving piles, piers and the many tons of steel and concrete that went into their construction. Both the "Potomac" type piers and cofferdam variety of construction was used. The two deep-water piers on which the big "cans" were not used were the huge concrete monoliths in which the suspension-span cables are anchored.

The four-mile length meant that curvature of the earth entered into the engineering and construction of the bridge. Water at the center of the bay is about two and one-half feet higher than at the shores. Thus, while the distance between the 354-foot high main towers for the 14-inch suspension cable is 1,600 feet at pier level, it is an additional quarter of an inch at the tips. Alignment of the bridge curves one degree forty minutes due to a requirement of the Corps of Engineers that the route across the ship channel at right angles. Onslaught of high winds and rough water on the Chesapeake could cause the uplift that could result in disaster. In the new bridge, however, vents have been built into the center span to break the vacuum effect on which wing-lift depends. Steel expands and contracts one-eighth of an inch per hundred feet through a fifteen-degree temperature change. Thus, theoretically, the new Chesapeake Bay bridge would shorten or lengthen two and one-third feet. More than seventy expansion joints are installed to take up this action. Finger-like, they have an average moment of two inches.

The bridge has a 28-foot roadway of asphalt wearing course laid over the varying thickness of the concrete slab. A lightweight concrete involving an aggregate known as Solite was used for three and one-quarter miles, thus decreasing the weight correspondingly. Normally, a line of traffic will proceed in each direction, with a spare lane for breakdowns or other stops. Equipment includes tow-truck, wrecker, snow plows, sweeper and sanding rig.

Twenty-four hours after opening the bridge to toll traffic, 8,278 vehicles had made the crossing. More than 50,000 tolls

(Continued on page 36)

Coal and Coke Projects Cost Set at \$318,500,000

Eighty-four coal and coke projects, costing about \$318,500,000, have been certified for rapid tax write-offs, says Secretary of the Interior Oscar L. Chapman.

Defense Solid Fuels Administrator Charles W. Connor pointed out that when the projected facilities are completed they will produce about 12,000,000 tons of coal and about 6,640,000 tons of coke.

Mr. Connor released a list of 17 coke and coal chemical projects, totaling \$100,483,996, which were certified for rapid tax amortization in the period from Mar. 1, 1952, through May 31, 1952. The list supplements previous tabulations of 67 projects costing about \$218,000,000 which were announced by DSFA on December 10, 1951, and March 17, 1952.

The coke projects approved include five in Pennsylvania; three in Alabama; three

in Ohio, and one each in California, Indiana, Iowa, Maryland, Massachusetts and Minnesota.

All of the approved projects listed call for slot-type ovens which produce coal chemicals in addition to coke. Four of the projects, designated by an asterisk in the attached list, are principally designed to increase coal chemical output.

Applications for accelerated tax amortization of coal and coke projects are referred to the Defense Solid Fuels Administration for analysis and recommendation. Final action on the applications is taken by the Defense Production Administration.

The list of coal and coke and coal chemical projects certified from March 1, 1952, through May 31, 1952, follows:

Name of Company	Location of Facilities	Amount Applied For	Amount Eligible	Per Cent Certified
Tennessee Coal, Iron & R. R. Co.	ALABAMA			
Sloss-Sheffield Steel & Iron Co.	Birmingham*	1,150,000	1,150,000	60
Alabama By-Products Corp.	Birmingham*	73,170	73,170	90
	Tarrant	1,177,800	1,177,800	50
	Total	2,400,970	2,400,970	
Yolo Steel & Metal Co.	CALIFORNIA			
	Sacramento	12,100,000	12,100,000	85
U. S. Steel Co.	INDIANA			
	Gary*	3,817,000	3,817,000	60
North American Steel Corp.	IOWA			
	Clinton	27,137,487	27,137,487	85
Bethlehem Steel Co.	MARYLAND			
	Sparrows Pt.	6,326,000	6,326,000	45
Eastern Gas & Fuel Associates	MASSACHUSETTS			
	Everett	3,014,889	3,014,889	40
American Steel & Wire Co.	MINNESOTA			
	Duluth	7,280,000	7,280,000	45
American Steel & Wire Co.	OHIO			
Interlake Iron Co.	Cleveland	1,450,000	1,450,000	45
Allied Chemical & Dye Corp.	Toledo	4,161,650	3,736,450	85
	Ironton	1,526,000	1,325,000	50
	Total	7,137,650	6,511,450	
U. S. Steel Co.	PENNSYLVANIA			
	Clairton	12,570,000	12,570,000	45
	Clairton*	1,200,000	1,200,000	60
Interlake Iron Co.	Eric	1,500,000	1,206,148	50
Central Iron & Steel Co.	Harrisburg	8,000,000	8,000,000	85
Central Iron & Steel Co.	Phoenixville	8,000,000	8,000,000	85
	Total	31,270,000	30,976,148	
	TOTAL	100,483,996	99,563,944	

*Coal Chemical facility

tions on "Mathematical and Physical Tables" and "Mechanics of Deformable Bodies." The other contributors to the second edition include the following: H. A. Ambrose, John L. Barnes, Mabel S. Barnes, Edward E. Bauer, A. C. Beiler, J. J. Benlich, J. G. Brainerd, R. D. Buhler, George S. Cherniak, Merle E. Dowd, Ward V. Evans, R. D. Faber, William H. Gross, H. R. Hanley, H. S. Hansen, Paul R. Jones, Paul J. Kiefer, John M. Lessells, R. B. Lindsay, Joseph E. Love, Jr., John A. M. Lyon, L. J. Markwardt, John W. Miles, D. F. Miner, R. B. Oliver, Edson R. Peck, Janvier M. Rice, S. A. Rosecrans, Walter C. Sadler, Merhyle F. Spotts, Victor L. Streeter, Milton C. Stuart, E. R. Van Driest, Milton D. Van Dyke, Matthew Van Winkle, Ernst Weber, R. W. White and R. A. Wilkins.

The second edition of "Handbook of Engineering Fundamentals" contains 1324 pages and is priced at \$10.00.

Teco Publication Found Useful Training Aids

Overseas members of the armed forces, who are studying engineered timber construction in the European Command Engineer School, are using as a text the book, "Typical Designs of Timber Structures," published by Timber Engineering Co., affiliate of National Lumber Manufacturers Association.

Commenting on the book as "a very useful training aid," Major Edmund R. Butch, a department chief of technical subjects at the engineering school, stated, "While I was stationed in Alaska during World War II, we used various Teco connectors in hangar and bridge construction. In our larger hangar spans, they worked wonders in building up large trusses."

In addition to the books, Timber Engineering has augmented the training course by supplying one of its new joint display kits, similar to the 240 kits placed in architectural and engineering schools this year. The kit contains chromium plated Teco wedge-fitting connectors and shear plates in actual timber joints, and three types of Trip-L-Grip framing anchors in position of tying down rafter and fastening joists to headers.

Booklet Describes Underwater Welding Methods

Steel welding methods underwater in ship salvage operations developed by the Navy are described in a manual now available to the public from the Office of Technical Services of the Department of Commerce.

As developed by the Navy Engineering Experiment Station in cooperation with two other Navy activities (Experimental Diving Unit and Salvage Training School) the underwater welding technique is a simplified arc-welding procedure.

The "Manual for Underwater Welding," in which this procedure is described, points out that welding underwater is still a technique to be used only in special cases, and in which safety precautions are a major factor. The limitations to the use of this new technique and the safety precautions required are discussed.

New Edition Published on Engineering Fundamentals

A new second edition of the famous "Handbook of Engineering Fundamentals," edited by Dean Ovid W. Eshbach of the Northwestern Technological Institute, was published in May by John Wiley & Sons.

Thirty-nine distinguished scientists contributed to this completely revised reference book, known for its thorough coverage of all phases of engineering. Since the appearance of the first edition in 1936, many new developments and changes in emphasis in various branches of technology have taken place, with the resulting need for an up-to-date version of this popular reference work. The discussions on mathematics, thermodynamics, and fluid mechanics have been entirely rewritten or revised. Similar treatment has

been given to the sections on electricity and magnetism, engineering materials, and engineering law. A new section on aerodynamics stresses theory basic to the design and performance of aircraft.

Many other changes serve to develop the basic facts and principles presented in the book. The engineering tables, for example, now include standard structural sizes for aluminum, as well as data on tangents and offsets for the use of civil engineers. At the same time, the table on standards and symbols has been brought up to date, and new tables added for surveyors. The MKS system of units not only has been incorporated into the table of conversion factors, but receives greater emphasis throughout the entire edition.

Dean Eshbach, who has been with the Northwestern Technological Institute since 1939, has contributed to the sec-

Tilt-Up Walls Speed Rayon Plant Construction



Above—"Tilt-up" wall construction speeded work at the new rayon plant being built near Mobile, Ala., by Courtaulds, Inc. Pre-cast wall panels are shown being set on the grade beams, ready for shimming and fastening to the structural steel columns.

Use of "tilt-up wall" construction technique has permitted economical and rapid erection of the buildings for the new rayon plant of Courtaulds (Alabama), Inc., near Mobile, Ala. The plant, which will be the most advanced rayon staple fiber plant in the world, was engineered and is being erected by the H. K. Ferguson Co., industrial engineers and builders of Cleveland, New York, Houston and Los Angeles.

The plant is being built on a 550-acre site and will consist of six principal buildings, including the main manufacturing building, a storage and maintenance building, and administration building, a boiler house, gate house and fan house. Preliminary work, started in late August of 1951, included clear-

ing the site of more than 100 acres of dense timber—utilized in the manufacture of pulpwood used in the process—and the construction of temporary roads and buildings.

Test borings indicated the presence of good bearing clay, and although design called for a loading of 3,500 pounds per square foot, most of the soil was able to take a load of 10,000 pounds per square foot without exceeding the safety limit.

The first building completed was the storage and maintenance building, a one-story structure, 180 feet by 400 feet, which contains machine, carpentry, electrical, instrument, blacksmith, pipe and boiler shops; maintenance, chemical and paint stores; fire station and locker rooms for maintenance personnel.

Steel erection for the main manufacturing building, which is almost a quarter of a mile long and 180 feet wide, was recently completed. The building consists of one-, two- and three-story sections, with a partial basement to permit gravity flow to process tanks.

Tilt-Up Wall Technique Used

Construction details are basically the same for all buildings, except the administration building, which is still in the design stage. Framework is of structural steel, and the roofs consist of precast light-weight aggregate slabs. The wall construction is two-part; the upper part consists of corrugated asbestos siding hung from the structural steel; the lower part consists of precast concrete sections. For the latter, Ferguson developed its own variation of the "tilt-up wall" technique. The technique as used in the construction of the maintenance building was as follows:

Some 61 pre-cast wall panels were used, all five feet high, but in 15 different lengths varying from 1 foot 1 inch to 23 feet 4 inches. There were 22 of the most common size, 22 feet 5 inches and 26 of the 61 pieces had different settings for inserts.

In order to save time prior to erection of steel and pouring the permanent concrete floor slabs, it was decided to cast the wall panels and then stack them ready for use, rather than pour them in so-called tilt-up position, normally adjacent to the final setting position. For this purpose, a base slab, approximately 45 feet by 90 feet was poured in a corner section of the building. The base slab was given a hard trowel-smooth finish and treated to prevent bonding with the walls to be cast.

(Continued on page 14)

Below—View of the base slab with the forms for the tilt-up panels in place ready for concrete pour.



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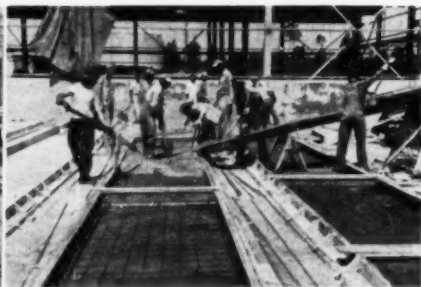
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Tilt-Up Walls Speed Rayon Plant Construction



Above—Left—Stack of pre-cast reinforced concrete panels ready for installation. Right—Pouring the concrete into forms for the tilt-up panels. Note the concrete base slab on which the forms rest.

(Continued from page 12)

Lumber 2 feet by 6 feet was used for the wall forms. The side forms were run five feet apart, parallel to the long side of the base slab, and the end forms were then set between the side forms. Approximately two-foot spacing was allowed between the end forms of adjacent sections so that the bond with the base slab could be easily broken by jacking against the sections ends. Before the forms were set, holes were first drilled in the concrete base slab, with a three-eighths inch star drill. The holes were then plugged with wood and the forms spiked to the plugs. To prevent spalling on the top inside edge of the wall panels a chamfer strip was set in the forms.

Inserts for Handling and Fastening

Three inserts to hold five-eighths inch bolts were cast in each end of the panels, so that they could be fastened to the structural steel columns with 2-inch by 8-inch steel straps. To permit lifting of panels, it was found necessary to place two inserts in the top of sections under 10 feet long, and four inserts in sections over the 10 feet size. Eyebolts of five-eighths inch size were placed in these inserts to hold the four-way pick-up sling. (In other buildings, anchor bolts were also set in the top of panels to hold window frame risers.)

The inside of the panels was poured face down, and the inserts formed on the base slab. After carefully locating the position of the inserts, small holes were drilled in the base slab and the holes plugged with wood. The inserts were then nailed to the plugs with small nails, so that only slight jacking action would be necessary to shear the nails.

After the panels were poured and allowed to set for three or four days, the forms were stripped by using five ton jacks between ends of wall panels, as well as the sides of adjacent panels. The panels were lifted and stacked by a 15-ton crane, using three 10 inch sheaves and three five-eighths inch cable slings in the following manner:

The top sheave was hooked to the crane cable. One of the cable slings was passed through the top sheave and each end of the sling was hooked to the other two

sheaves. Each of the lower sheaves had a sling cable passed through it, with ends of each sling fastened to the five-eighths inch eyebolts set in the top of the panels.

When the time came to install the wall panels, a motor crane picked them up from where they were stacked and set them at the proper location on concrete grade beams. Originally, expansion joint material was tried between the grade beam and the base of the panels. However, it was soon discovered that the expansion joint material would not take up any unevenness in the bearing surfaces. Consequently, it was discarded in favor of shimming the panels to the correct elevation using wooden wedges. A cement finisher was then dry packed between the wall slab and the grade beam. Between adjoining slabs, a premolded asphalt expansion joint, faced with caulking compound, was installed.

Continuous Pouring of Concrete

As the design for each section of the plant is completed, plans are rushed to the plant site and the construction crews swing into work. Careful planning on the part of Project Manager James N. Barnes, of the Ferguson Company, and his crew has permitted close adherence to construction schedules.

A typical example of this planning was the pouring of the spinning room operat-

ing floor. The reinforced concrete columns and floor, including bases for spinning machines, special floor troughs, and inserts for vitrified clay tile outlets were installed in one continuous pour, starting at 6 o'clock in the morning and finishing at 3 o'clock the next morning.

The concrete forms were particularly intricate because the floor pitched in four different directions at different angles, and the degree of slope varies from one floor section to another. Also, the vitrified tile inserts had to be correctly placed within one-eighth of an inch. All told, approximately 350 cubic yards of concrete were poured.

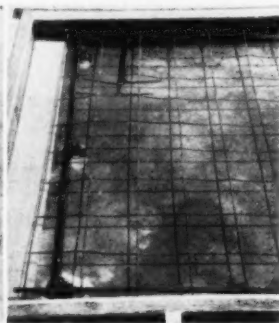
A unique feature of the plant is the use of water-flooding of the building roofs during the summer months. A three-quarter inch layer of water covers the roofs, so that the evaporation of the water will serve to cool the ceiling below.

It is expected that the plant will be in full production in 1953. A peak work force approaching 2,000 persons will be required for construction.

Moto-Sweeper Described

A four-page catalog describing a new Commander Moto-Sweeper has just been released by The Moto-Mower Co., 4600 Woodward Avenue, Detroit 1, Mich. The new Moto-Sweeper has dual brushes.

Below—Left—Close-up of installed pre-cast wall panels, showing method of fastening to the structural steel columns. Right—Layout of the reinforcing steel, with the set-in eyes for the inserts.



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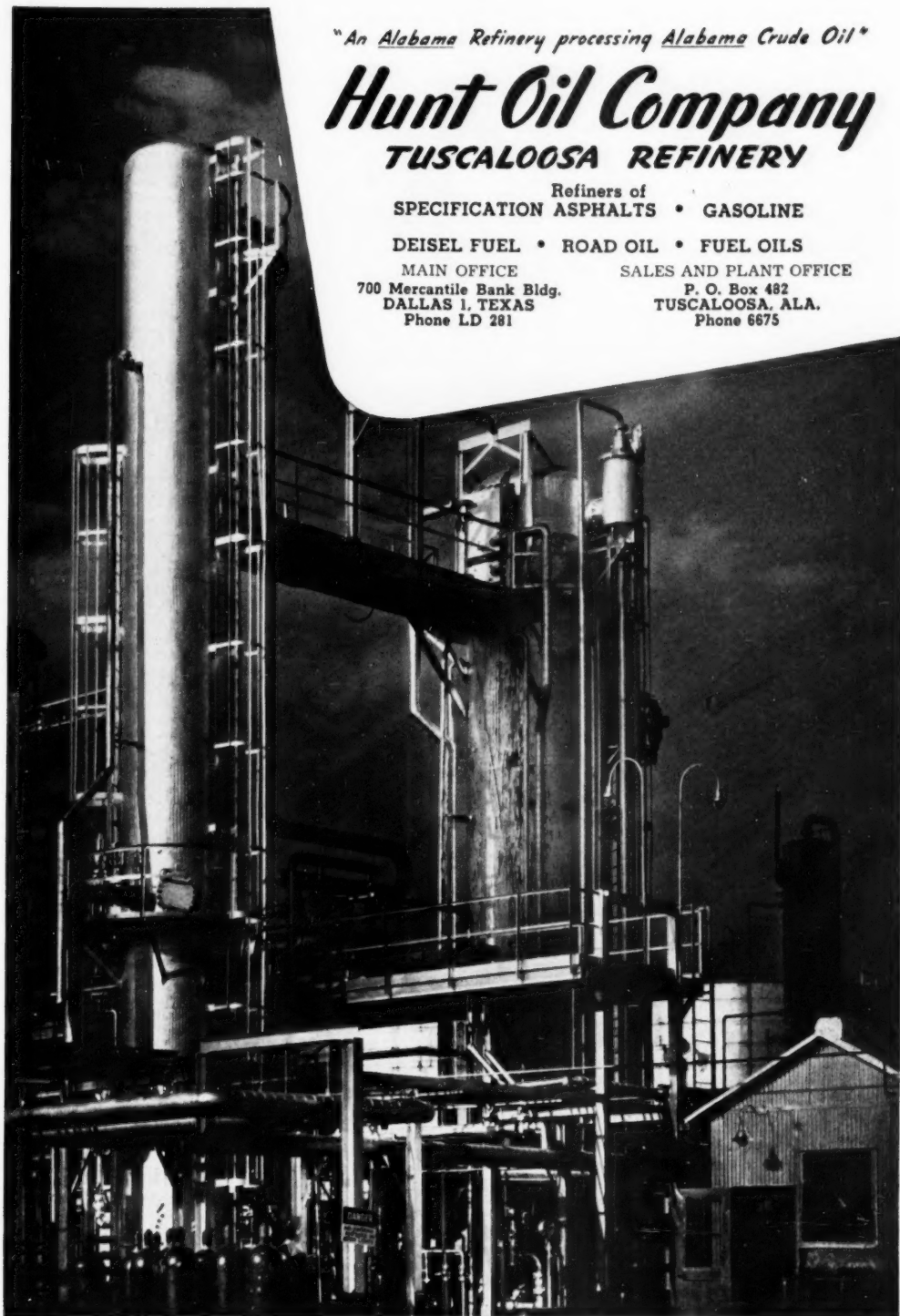
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Construction Starts on Doctortown Cellulose Plant



Above—Clyde B. Morgan, Rayonier president, operates International Diesel tractor equipped with silvered blade at new cellulose plant ground breaking.

A pulp mill which will produce 250 tons of chemically purified wood cellulose a day for Rayonier, Inc. and create new employment for nearly 1,000 people got under way recently at Doctortown, Ga., when ground was broken by a bulldozer brightly silvered for the occasion.

At the bulldozer's controls was Clyde B. Morgan, president of Rayonier, Inc., leading U. S. producer of purified wood cellulose, which is the basic raw material for such products as cellophane, rayon and acetate fibers, plastics, tire cord and photographic film.

Mr. Morgan said his company will build and operate the mill which will cost an estimated \$25,000,000. Because of the increased world-wide demand for cellulose the new plant, Rayonier's fifth, will be "rushed to completion by 1954."

The Doctortown location was selected because it is the heart of a vast timber region whose wood is among the most suitable for processing into high-quality cellulose. "This area is ideal for Rayonier's purposes because the type of timber growing here is replenishable," Mr. Morgan noted. He added that the company pursues a sound program of reforestation, reseeding or replanting immediately in the wake of its timbering operations.

He told that the United States is the world's largest consumer of purified wood cellulose. "Cellulose requirements have been steadily increasing over the last 25 years."

It was stated that the North American continent is the only area in the world which can economically supply the additional cellulose needed to meet current and future requirements because "only in North America do wood resources exist which can be quickly and economically developed."

The importance of cellulose as a raw material is that it is only one which is renewable and can be replenished with comparative ease over a relatively short period of time. "It's not like our other valuable natural deposits such as coal, oil, and metals which when once consumed are gone forever," Mr. Morgan explained.

Some of the timber for the multi-million dollar plant will come from Rayonier's forest reserves in this area. But much of it will be bought locally, it was learned.

The new pulp mill will employ approximately 450 people, and an additional 500 will eventually be required by contractors supplying pulpwood for the mill.

With three pulp mills in the State of Washington and a fourth at Fernandina Beach, Florida, Rayonier's fifth and newest mill will employ an improved process, recently developed by its research and engineering divisions, to manufacture superior grades of wood cellulose for high tenacity yarns. The plant will also be able to produce nitration for military explosives as well as the standard cellulose textile yarns.

The Doctortown mill is specifically designed to produce a broad variety of cellulose types. Such diversification not only helps protect the company from being strongly affected by fluctuations of demand in the textile markets, but also helps to insure a more even, steady employment, Mr. Morgan asserted.

In answer to questions about his company, Mr. Morgan said that Rayonier is not a newcomer to the South. He spoke briefly about Rayonier's pulp mill at Fernandina Beach which, like the forthcoming Doctortown plant, produces cellulose principally for high tenacity yarns and tire cord, as well as for acetate manufacturers. Operations at Fernandina are

currently being increased as an unusually large-size digester is being added to the original four.

Mr. Morgan added that Rayonier now represents 61 per cent of U. S. dissolving wood cellulose capacity, 37 per cent of North American capacity, and 20 per cent of world capacity. He said that although Rayonier is a big company and the leader of the purified cellulose industry, he was confident that "Georgia will find us good neighbors and down-to-earth sort of people. Our record speaks for itself. We are young, growing firm in a growth industry. With the continuing upturn in populations everywhere, there is limitless work ahead for supplying the ever increasing demand for man-made fibers, particularly those derived from our cellulose."

The Doctortown plant is Rayonier's major development in its \$80,000,000 expansion program which began after World War II. It will add about 87,000 tons capacity to the company's annual operations.

Turbine Contract Awarded for Gantt Electric Plant

Contract for the turbines for the 15,000-kilowatt generating plant proposed at Gantt, Ala. has been let to Brown-Boveri & Co., Ltd., with boiler contract awards to Riley Stocker Co., of Worcester, Mass., and a condenser contract with Condenser Service, of Hoboken, N. J., now under consideration.

Alabama Electric Cooperative will build the plant and transmission facilities to distribute wholesale power. The original plan called for two 12,500 kilowatt steam generating units. The new plan calls for two 7,500-kilowatt units. The original plan called for transmission lines and substation facilities to serve three cooperatives in Florida and three in Alabama who will not be served through the new plan. Under the new plan three other Alabama cooperatives which were to be fully served will receive only part of their power requirements from the Alabama Electric Cooperative.

The first loan to this cooperative was approved in September 1941. The most recent loan was in 1946. The cooperative has been operating diesel and hydro electric plants acquired when it took over the properties of the Alabama Water Service Company. In addition, it has been purchasing power from the Alabama Power Company.

The proposed 15,000-kilowatt steam plant will supplement the capacity now available from the cooperative's hydro and diesel plants by supplanting in part the power being purchased from the Alabama Power Co.

Course Held by Timber Unit

A special summer course of instruction in adhesives and laminating methods was held August 4-8 at the research laboratory of Timber Engineering Co., affiliate of National Lumber Manufacturers Association, Washington, D. C., according to C. A. Rishell, director of research.

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Florida Holds Bid Opening Totaling \$6,853,473

Florida's early July bid opening resulted in low proposals totaling \$6,853,473. Included in the projects was the double tube, four-lane subaqueous vehicular tunnel proposed under the Intracoastal Waterway at Fort Lauderdale, the low bid for which was \$4,121,169.

The projects and the low bidders included the following:

Broward County—State Project, Jobs Nos. 8612-175, 8613-175, 8609-175, 8603-175, and 8620-175, Roads Nos. 810, 814, 816, A1A and 824, and State Project Job No. 8618-176, Proposed Extension of Road No. A1A in Fort Lauderdale; work consists of borings at proposed bridge sites across the intracoastal waterway at Deerfield, Pompano Beach, Oakland Park, Dania and Hallandale, and at the site of the proposed bridge across the stream connecting Mercedes River and Mayan Lake in Fort Lauderdale; Duval Engineering and Contracting Co., Jacksonville, \$19,200;

Broward County—State Project, Job No. 8618-175, Proposed Extension of Road No. A1A (S.E. 17th Street) in Fort Lauderdale; work consists of constructing a bridge approximately 999 feet long composed of an electrically operated double-leaf bascule span and 14 steel I-beam spans with concrete piers; Industrial Contracting Co. and Associates, Jacksonville, \$849,707; Powell Brothers, Inc., Fort Lauderdale, \$930,952; George E. Bunnell, Inc.,

Miami, \$939,678;

Broward County—State Project, Job No. 8605-110, constructing double tube four-lane subaqueous vehicular tunnel across the Intracoastal Waterway at Las Olas Boulevard, Fort Lauderdale, Broward County, Fla., with two 21-foot roadways, 850 feet in length between portals, and 1682.16 feet in length between grade points, consisting of a tile-lined, waterproofed, reinforced concrete box-type tunnel section and bricklined, waterproofed reinforced concrete open ramp sections, with ventilation, lighting, pumping and automatic control systems, and approximately .178 mile of approaches and .478 mile of side roads of varying widths, and incidental items; Brown & Root, Inc., Austin, Tex., \$4,121,169; Mason & Hanger Co. and George E. Bunnell, Inc., \$4,226,000; Merritt-Chapman & Scott Corp., \$4,339,103;

Dade County—Access Road Project No. AD-2, Job No. 8700-316, LaJure Road; work consists of constructing a 60-foot concrete deck bridge on precast concrete piling over Biscayne Canal; George E. Bunnell, Inc., Miami, \$14,972; Powell Brothers, Inc., Fort Lauderdale, \$16,124; Ryan Construction Co., Tampa, \$16,950;

Dade County—Federal Aid Project No. UI-026-1(7), Job No. 8724-205, State Road No. 9, Dade County, between Opalocka and the Broward County Line; work con-

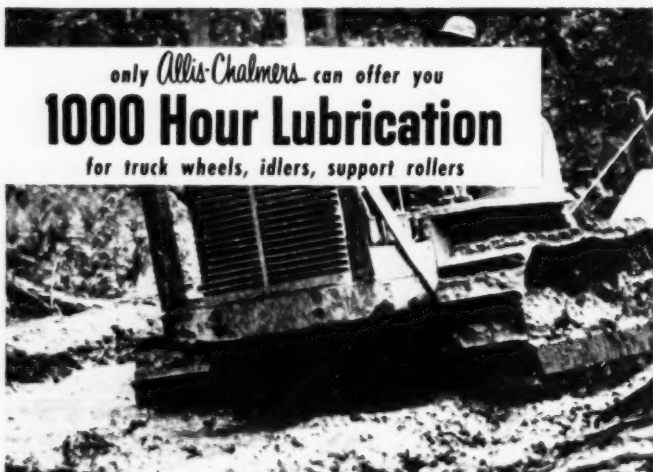
sists of grading, stabilizing, paving, small drainage structures and incidental items; R. H. Wright & Son, Inc., Fort Lauderdale, \$595,919; Belcher Oil Co., Miami, \$635,854; Brooks Paving Co., Miami, \$639,079;

St. Johns County—Federal Aid Project No. S-301(2), Job No. 7851-251, State Road No. S-210, between State Road No. 13 and a point approximately 5.5 miles northeast; work consists of grading, stabilizing, paving, small drainage structures, and incidental items; L. L. Hall Construction Co., Orange Park, Fla., \$105,204; M. J. Carroll Contracting Co., Leesburg, Fla., \$114,238; Duval Engineering and Contracting Co., Jacksonville, \$114,742;

Collier County—Federal Aid Project No. S-353(1), Job No. 0357-250, State Road No. S-840-A, between SR 840 and SR 846; work consists of grading, stabilizing; one 60-foot concrete bridge; small drainage structures, and incidental items; Marion Construction Co., Ocala, Fla., \$127,234; J. W. Conner & Sons, Inc., Tampa, \$142,798; Belcher Oil Co., Miami, \$147,113;

Brevard County—Federal Aid Project No. S-356(1), Job No. 7006-250, State Road No. A-1-A, between Sebastian Inlet and a point approximately 5.7 miles north; work consists of grading, stabilizing, paving, small drainage structures, and incidental items; Langston Construction Co., Orlando, \$136,890; White Construction Co., Inc., Bronson, \$142,364; Hubbard Con-

(Continued on page 18D)



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Florida Holds Bid Opening Totaling \$6,853,473

(Continued from page 18)

struction Co., Orlando, \$154,907;

Hendry County—State Project, Job No. 0753-150, Road No. S-832, from a point approximately 6 miles south of SR 832 to a point approximately 5.837 miles south and west; work consists of grading and incidental items; Polk Construction Co., Lakeland, \$105,709; R. H. Wright & Son, Inc., Fort Lauderdale, \$129,927; Cone Brothers Contracting Co., Tampa, \$136,980;

Hernando County—State Project, Job No. 0802-108, Road No. 55, between MP-10 and MP-16; work consists of reworking, widening and repaving; A. F. Rich

Co., Tallahassee, \$199,718; J. W. Conner & Sons, Inc., Tampa, \$206,165; Polk Construction Co., Lakeland, \$214,787;

Hillsborough County—State Project, Job No. 1052-150, Road No. S-587-A, from Waters Street north approximately .650 mile on Armenia Avenue; work consists of reworking and widening existing pavement and surfacing; Cone Brothers Contracting Co., Tampa, \$10,698; Polk Construction Co., Lakeland, \$13,768; J. W. Conner & Sons, Inc., Tampa, \$14,436;

Hillsborough County—State Project No. 1056-15, Road No. S-574-A, from SR 43 east along Buffalo Avenue; work consists of grading, paving, drainage structures

and incidental items; Cone Brothers Contracting Co., Tampa, \$47,503; Peterson & Earnhart, Tallahassee, \$48,891; Burton Walker Construction Co., Plant City, \$49,136;

Hillsborough County—State Project, Job No. 1057-15, Road No. S-579, from approximately 1.250 miles south of Wimauma to a point approximately 1.600 miles south; work consists of paving and incidental items; J. W. Conner & Sons, Inc., Tampa, \$25,074; Cone Brothers Contracting Co., Tampa, \$25,438; Ewell Engineering & Contracting Co., Lakeland, \$27,049;

Polk County—State Project, Job No. 1657-150, Road No. S-676, from Hillsborough County Line to SR 60 via Nichols; work consists of grading, paving, drainage structures and incidental items; Polk Construction Co., Lakeland, \$91,198; Cone Brothers Contracting Co., Tampa, \$93,855; Ewell Engineering & Contracting Co., Lakeland, \$96,536;

Taylor County—State Project, Jobs Nos. 3855-150, 3857-150 and 3858-150, Roads Nos. S-356, S-351-A, from SR 30 to SR 20 (Foley Cut-off), from SR 55 to SR 20 (Secotan Road) and from Fenhalloway River southwest approximately 4 miles (Puckett Road); work consists of paving and incidental items; James H. Craggs Construction Co., Ocala, Fla., \$84,166; White Construction Co., Inc., Bronson, Fla., \$88,874; Fairchild-Florida Construction Co., Live Oak, Fla., \$96,921;

Brevard County—State Project, Job No. 7051-151, Road No. A-1-A, from Long Range Proving Grounds North to U. S. Coast Guard Station; work consists of grading, paving and incidental items; L. L. Hall Construction Co., Orange Park, Fla., \$37,178; Hubbard Construction Co., Orlando, Fla., \$44,972; Marion Construction Co., Ocala, Fla., \$49,588;

Duval County—State Project, Jobs Nos. 7250-150, 7250-151 and 7250-152, Streets in Lake Forest Sub-Division, Streets in Carvill Park Sub-Division, and Helena Street, from Lem Turner Road to West; work consists of resurfacing existing pavements; Duval Engineering and Contracting Co., Jacksonville, Fla., \$31,135; Jaxon Construction Co., Jacksonville, \$33,107;

Putnam County—State Project, Job No. 7600-105, in East Palatka; work consists of access roads to Florida Highway Patrol Station; J. W. Conner & Sons, Inc., Tampa, \$3,769; Campbell Paving Co., \$4,799; Asphalt Paving, Inc., Jacksonville, \$5,009;

Volusia County—State Project, Job No. 7917-102, Road No. 40 between Riverside Avenue in New Smyrna Beach to Coronado Beach; work consists of clearing and grubbing, grading, paving and incidental items; L. L. Hall Construction Co., Orange Park, \$105,874; Ewell Engineering and Contracting Co., \$109,128; W. L. Cobb Construction Co., Tampa, \$120,404; Palm Beach County—State Project, Job No. 9352-150, Road No. S-704, from proposed SR 7 east approximately .973 miles; work consists of grading, paving and incidental items; Brinson Construction Co., Tampa, Fla., \$35,622; Campbell Paving Co., \$37,722; Finley P. Smith, Fort Lauderdale, \$41,263;

(Continued on page 18R)



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They can't be beat and
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*W. J. "Bill" Anderson,
Superintendent of Belcher
Oil Co., Miami, Florida,
and a LaPlant Choate on
the Palm Beach Interna-
tional Airport runway ex-
tension job at West Palm
Beach, Florida. Operator,
A. H. Hobbs.*



**Above, one of the efficient LaPlant Choates which
piled up these production figures on the job:**

3 TS300's w/ 1 Allis-Chalmers HD20 as pusher:

On 2000 ft. haul—4100 Cu. Yds.—8 hrs.

On 3000 ft. haul—3340 Cu. Yds.—8 hrs.

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and
money saving
equipment,
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Atlas Powder Contracts with Ordnance Corps

Atlas Powder Company announces it has signed a contract with the Army Ordnance Corps to act as consultants on reactivation of Volunteer Ordnance Works near Chattanooga, Tenn., and to operate the works for the manufacture of TNT.

Atlas is to operate the works under the supervision of the Ordnance Ammunition Center, Joliet, Ill. Signing of the pact marked the end of more than four months of negotiations between the company and the center.

D. J. Carroll Copps, general manager of the company's Explosives Department, announced that the plant is expected to go into production in the early spring of 1953. It is estimated that approximately 1,500 will be employed at the site when full operation is effected.

The signing of the contract marks the first entrance of Atlas into ordnance production since the end of World War II.

During that war, Atlas operated for the government a TNT plant at Weldon Spring, Missouri, which was the largest of its kind in the country; a shell- and bomb-loading plant at Ravenna, Ohio, and a TNT plant at Paducah, Kentucky. All three plants were government-owned.

Each of these plants won Army-Navy "E" awards for excellent production records.

The appointment of key personnel to run the plant and the establishment of

a new division in his department also were announced by Mr. Copps.

Effective immediately, he said, the Government Ordnance Works Division has been established and Henry T. Clark appointed manager. Mr. Clark has been manager of the standards section in the explosives operating division.

Charles G. Hersh, the company's assistant chief engineer since 1949 and manager of the Kentucky Ordnance Works in Paducah, during World War II, has been named general manager of the Volunteer Works.

Both Mr. Clark and Mr. Hersh have had extensive experience in ordnance work. Mr. Clark, who has been with Atlas since 1937, was director of production control at the Weldon Spring Ordnance Works during World War II.

Mr. Hersh, who has been with the company since 1919, assisted with the construction of other TNT plants operated by Atlas during World War II before becoming manager of the Kentucky plant.

Two Power Plants Start Operating

Alabama Power Co. last month placed in operation two more large generating units. One was a 100,000 kilowatt unit at its Gorgas steam plants, bringing the total generating capacity there to 390,000

kilowatts and making it the largest investor-owned steam generating center in the Southeast. The other was a 55,000 kilowatt unit installed at Martin dam on the Tallapoosa River, bringing the total capacity there to 154,000 kilowatts or (approximately 200,000 horsepower).

Construction for both of these units was completed on schedule. The company's total generating capacity now is 1,129,500 kilowatts, or approximately one and one-half million horsepower. It has under construction near Mobile a 250,000 kilowatt (333,000 horsepower) steam generating plant; the first unit of which is expected to be in operation by the summer of 1953.

The company's construction program for the period 1952-1954 will be approximately \$110,000,000.

Luria Buildings Installed at Albany, Georgia

Thad Huckabee, Albany, Ga., local warehouseman, has purchased two standardized steel structures with an aggregate floor area of 30,000 square feet from the Luria Engineering Co., according to an announcement made by J. McC. Hill Jr., southern district manager of the latter concern.

The buildings, which are to be used as warehouses, will be located at 625-629 Roosevelt Avenue, Albany, Ga. Both are of the rigid "A" frame design fabricated by Luria at its plant in Bethlehem, Pa., and shipped to Albany for erection.

GAR WOOD—ALLIS CHALMERS MATCHED FOR BIGGER LOADS



When the going's really rugged, nothing can match a crawler powered scraper . . . Gar Wood scrapers with Allis Chalmers tractor power offer a combination of unequalled performance. With heaped capacities from 12 to 32 cu. yd. there's a Gar Wood scraper for every tractor size. Extra large apron opening and forced positive ejection with rate of ejection always under control mean new records in earthmoving economy.

- Also insist on Gar Wood dozer blades. Get more from A-C power, sturdy Gar Wood blades.

- See George Park Tractor Company for the complete line of Gar Wood tractor equipment and the new Gar Wood 75 excavator; and, in addition, Gar Wood's complete line of Buckeye Ditchers, Highway wideners, spaders, and finegraders.

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NOW all the **HOT PATCH** material
you want...any type...any quantity
where and when
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**for ALL maintenance
and small paving jobs**

the **NEED**

In the face of ever heavier traffic loads, rising costs and lack of funds greatly limit new construction and place an ever greater burden on maintenance programs in city, town, county and state. For this work even the best patch is none too good. Yet until the advent of the new Mixall, an efficient and economical means of producing all types of hot high quality patch material has not been available.

is **ANSWERED**

A small, highly portable unit, capable of on-the-spot production of even the highest types of hot mixes comparable to those produced in Barber-Greene's largest continuous hot mix plant—that is the Mixall. Its range of usefulness extends throughout the field of road maintenance into small paving and resurfacing jobs.

In the Mixall, Barber-Greene offers a unique and effective combination of an efficient rotary drum aggregate dryer with a proved B-G twin shaft heated pugmill mixer. It is rightly called the Mixall because of all the things it can do . . .

- ... **Mix all quantities:** from a single 300 lb. batch up to 5 tons per hour of hot mix—or up to 10 tons per hour of cold patch.
- ... **Mix in all locations:** towed to the job by truck loaded with aggregate . . . fed directly from truck or from stock pile or pit. Can work in a single traffic lane. No set-up time required.
- ... **Mix in all weather:** heated aggregate makes low atmospheric temperature mixing possible—allows quick repair to prevent major failures.
- ... **Mix all types:** of bituminous materials including stabilized mixes—as well as low slump Portland cement mixes.

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Tri-State Equipment Co., Inc.

520 So. Mulberry "at Calhoun", MEMPHIS 2, TENN.

WHITE Construction Company of Kinston, North Carolina, produces approximately 1200 to 1500 tons of asphalt daily at their Greenville plant. Sand is brought from nearby pits to plant, then stockpiled for future use.

50% more output than 2 crawlers

Until recently, yardage was handled by two 91 h.p. crawlers and scrapers. Track costs in the abrasive material were excessive and production so low that Company President A. J. White decided to try a 122 h.p. 7-yd. D Tournapull. On a demonstration over short 900' cycles, the 1 rubber-tired "D" outproduced the 2 crawlers, combined, by over 50%! All 3 rigs self-loaded about 5 cubic yards per load... but the Tournapull completed a round trip every 3 minutes, while the crawlers required 10. The Tournapull got the job!

Makes 10 trips hourly

Today, working longer 2200' cycles, the "D" averages a load every $4\frac{3}{4}$ to 5 minutes. Cycle time includes 40 to 45 seconds to self-load 5 to $5\frac{1}{2}$ bank yards of dry sand and 10 seconds to dump. Production averages 52 bank yards per 50-minute hour.

Eliminates track maintenance

In addition to boosting output over 50%, the "D", which costs less than $\frac{1}{2}$ of the 2 crawler-scraper rigs, has eliminated all crawler track maintenance. Because its 4 tires replace approximately 500 wearing parts in the comparative track assembly, parts inventory is greatly reduced... lubrication and repair expense cut. "The Tournapull is hauling sand to our plant cheaper than any other scraper we have ever had," says White.

Other contractors agree

White's experience and comments are not exceptional either. Here's what other contractors say:

Finley P. Smith, using Tournapulls to build a 138,000-yd. railroad grade separation near Ft. Pierce, Fla. . . . *"D's are the only equipment I've seen that will haul ball-bearing ocean sand economically."*

J. C. Wesley, Superintendent on H. E. Wolfe Construction Company's 325,000-yd. highway job between Orlando and Clermont, Fla. . . . *"Our 3 Tournapulls move more yards of sand per day than any machines I've seen of their size."*

G. J. Ham, using both crawlers and Tournapulls to level 100,000 yds. of pure blow sand at Grand Rapids, Michigan... *"Tournapulls go loaded where crawler equipment won't go empty... move dirt faster and cheaper per yard than any equipment we've ever owned."*

If you are working in sand, it will pay you, too, to switch to Tournapulls. Your LeTourneau Distributor will be glad to help you estimate the production you can get with these rigs. Ask him for performance reports on work similar to yours.



With low-pressure wide-base 45" sand tires on both drive wheels, Tournapull has ample traction and flotation to pull through this dry sand. Power-proportioning differential also helps by automatically allocating up to 4 times the power to drive wheel on best footing.



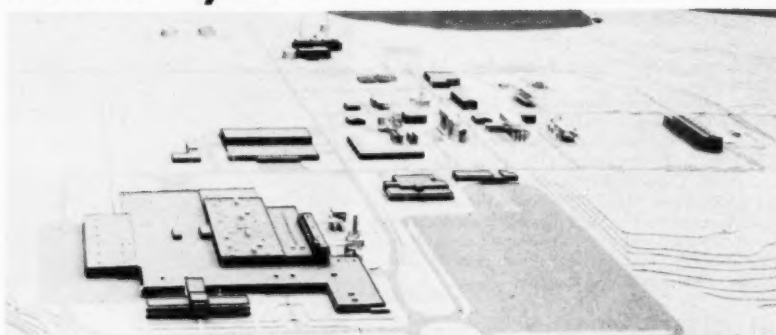
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Pensacola Nylon Plant Under Construction



Above—Scale model of nylon filament yarn plant being constructed at Pensacola, Fla., by the Chemstrand Corp., shows plant office and textile spinning area at lower left and chemical area where raw materials will be produced at upper right. The only integrated nylon plant of its kind in the county, the project will consist of nearly 30 separate structures.

Chemstrand Corp. released an illustration of a scale model of its nylon filament yarn plant under construction north of Pensacola, Fla.

Roy G. Hemminghaus, plant manager, pointed out that the prototype when finished will be the first integrated nylon plant in this country. The plant comprises two basic areas, the chemical area where the intermediates are produced and the textile area where the fiber will be spun, plus numerous other structures necessary for a project of this scope. Nearly 30 separate structures plus storage tanks comprise the entire project. All are of the most modern concepts of design and construction.

The chemical area provides facilities to produce nylon salts required by the textile area for spinning nylon filament yarn, he explained. Heretofore, nylon salts have been produced at separate locations and shipped to spinning plants located elsewhere in the country.

The entire plant is being built on a 120-

acre area virtually in the center of Chemstrand's 2,000-acre tract along the Escambia River 12 miles north of Pensacola. The plant is expected to employ upwards of 3,000 men and women when completed. Preliminary survey work and ground clearing, plus installation of warehouse buildings, got underway just a year ago. Construction has advanced on a timetable schedule.

The spinning building dominates the textile area. This structure measures 600 by 750 feet. This area is expected to be kept on a 24-hour work-day basis, and will employ an estimated 2,300 workers on three shifts.

Immediately in front of the spinning building as one enters the plant area from the main entrance is the plant office building where some 150 persons will be employed.

The chemical area will occupy a plot 800 by 1,000 feet and will consist of facilities to produce the salts.

Other facilities required for a plant of

this magnitude, Mr. Hemminghaus said, include laboratories, warehouse facilities, maintenance shops, power plant, tank storage facilities and parking areas—the main one of which will accommodate 800 cars.

Nylon products, he indicated, will range from fiber for hosiery to fiber for tire cord. Fiber is to be produced for many other wearing apparel and industrial applications.

At Decatur, Ala., Chemstrand has its administrative headquarters, research center and Acrilan acrylic fiber manufacturing plant.

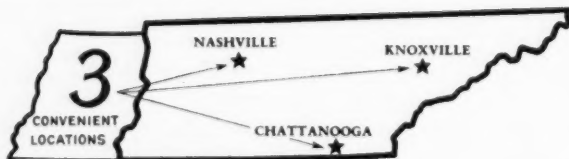
New Housing Programmed

Programmed for private construction in the Milan, Tenn., critical defense housing area are 80 rental and 20 sale units.

Of the rental quota, 30 are programmed as two-bedroom units to rent for not more than \$60 a month and 50 three-or-more bedroom units to rent for not more than \$70 a month.

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*Construction and
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Ledbetter's 'CATS' work on U. S. 41



"Train-loading" speeds dirtmoving by these "Cat" D8's and No. 80 scrapers.



On the new four-lane U. S. 41, a "Cat" dirtmoving team is completing a 1,000,000-yd. road job, part of the super highway that will link Atlanta with Chattanooga.

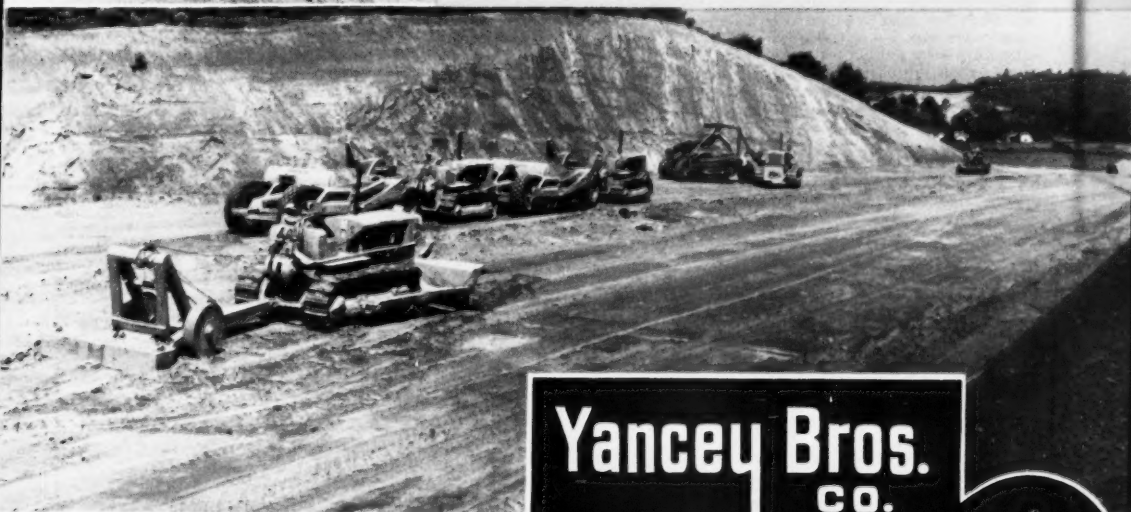
This latest section near Cartersville is being readied for paving by Ledbetter-Johnson Construction Co., of Rome, with part of their large "Cat" fleet.

"Caterpillar" equipment that helped complete this job included three D8's (two with "Cat" No. 80 Scrapers), a D8 Bulldozer and a D8 with "Cat" No. 28 Ripper. Five D7's cleared land, did rough grading and pulled scrapers. Three No. 12 Motor Graders kept fills in shape. The Lorain 80 shovel that loads surface treatment material is powered by a "Cat" D13000 engine.

The grading superintendent in charge of the job comments, "After over 20 years moving dirt, I don't think there's anything else but 'Cat.' I've used 'Cat' all the way."

With their "Cat" fleet, Ledbetter-Johnson is ready to tackle any big job! A total of five D8's, 12 D7's, one D6 and D4, 11 No. 12 Motor Graders, two No. 28 Rippers and shovels powered by "Cat" engines gives them power to handle any job.

"Caterpillar" equipment pays its way!



On this 1,000,000-yd. job there's plenty of "Cat" power at work! Here is a 50-ft. cut that called for 135,000 yards of dirt to be moved!

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Alabama Counties Use International Equipment



Above—Two International TD-18's and a T-6 working on widening six miles of old Chilton Road, north of Grove Hill, Ala. The work is being done by road machines owned by Clarke County. A narrow, twisting trail is being eliminated to speed farm-to-market traffic.

Increased revenues from state and county gasoline taxes are being used in all parts of Alabama to defray the construction costs of improving and blacktopping miles and miles of roadways in the state's farm-to-market system.

With state and county gasoline tax funds being used in equal proportions to finance the improvements, some counties are doing the road building with their own crews and equipment while still others are finding it advantageous, from a dollars and cents standpoint, to let the jobs to private contractors.

The 1952 Talladega county road program calls for the construction of approximately 10 miles of 18-foot blacktop roads, all to be built with county-owned equipment, which includes two International TD-18 crawlers and scrapers, two

International TD-18 dozer tractors, one Caterpillar D7 dozer, and an International ID-9 wheel tractor used with sheepfoot roller. L. T. DeBardelben, Talladega county engineer, reports recent road construction costs have been averaging close to \$20,000 per mile, and when the county receives bids that run below this figure, contractors get the jobs and the county equipment is diverted to maintenance.

The four districts in Clarke county, Ala., all own crawlers equipped for road building and pool the equipment to tackle county farm-to-market road improvements. Since 1947 these machines, which include three International TD-18's used with scrapers and dozers and an International T-6 and sheepfoot roller, have been used to build approximately 30 miles of 18-foot blacktop roads.

T. V. A. Progress Noted

The first stage cofferdam at the Fort Patrick Henry dam of the Tennessee Valley Authority is past 70 percent complete. Excavation of the tailrace channel continues, and work on the access road to switchyard and powerhouse has been resumed. At the Boone Dam, concrete placing in the intake sections of Units 1 and 3 has been completed. During May about 125,000 cubic yards of rolled fill were placed in the right embankment. Erection of No. 3 turbine continues.

At Johnsonville Steam Plant work continues on the boilers of Units 5 and 6. Considerable work has been done on the coal-handling facilities, and the crusher building was placed in service on April 29.

Erection of structural steel for Unit No. 3 and Unit No. 4 continues at the Shawnee Steam Plant. Erection of boiler accessories continues, as well as work on the crusher building, hopper building, and conveyor tunnels for the coal-handling facilities.

Concrete has been placed in the powerhouse area at the Kingston Steam Plant, and the intake and discharge culverts for the first four units have been completed. Structural work on the bridge over U. S. Highway No. 27 is finished.

Construction plant buildings at the Colbert Steam Plant are practically complete. The concrete mixing plant has been started.



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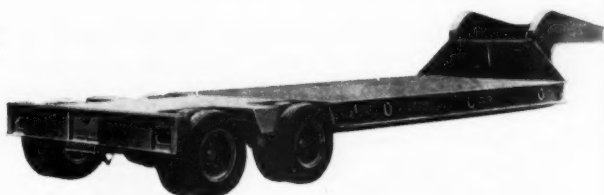
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MODEL "MTS" MACHINERY TRAILER

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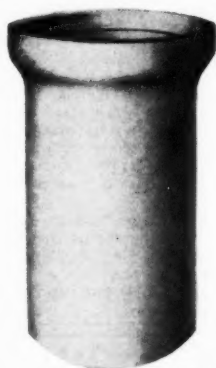
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Thor Rock Drills, Paving Breakers, and
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Scrapers, Dozers, Power Control Units
"Terra-Cobra" self propelled
earthmoving units

671 FORD PLACE, N.E. — Phone: Elgin 2661 — ATLANTA, GA.

New Warehouses Built at Marietta Base

Air Force Engineers of the Aviation Engineer Force are currently engaged in an important construction training project at Marietta, Georgia, under an arrangement worked out jointly by the Air Force and Lockheed Aircraft Corp. The project provides training in steel erection and general building construction for officers and men of the 835th Engineer Aviation Battalion, a reserve unit.

The buildings, produced by the Luria Engineering Co., will be used as warehouses that will cover about 30 acres of ground and will be built by the engineer-trainees from the ground up, according to J. McC. Hill, Jr., southern district manager at Atlanta for the Luria concern, which specializes in the design and construction of standardized steel-frame structures for industry.

Construction got under way late in June, Mr. Hill said, following shipment of the "packaged" buildings from the Luria plant at Bethlehem, Pa. Michael Back, general construction superintendent for Luria, visited the site to guide the trainees during the initial erection stage.

About 160 officers and men of the Aviation Engineer Force from Wolters Air Force Base at Mineral Wells, Texas, started the project last December and did all the clearing and grading, as well as

the work on an underground drainage system and foundations and paving.

The Air Force engineer also erected a "batching" plant for mixing concrete for the foundations, retaining walls and floor slabs.

Mr. Hill pointed out that erection is expected to proceed smoothly, since only fitting and bolting will be required for the building frame, sashes, doors, ventilators and skylights.

Both warehouses will be employed jointly by Lockheed and the Air Materiel Command to store parts, machine tools and equipment. They represent an expansion of existing facilities which the aircraft company plans to use soon for the manufacture of B-47 bombers. The plant was employed during World War II by Bell Aircraft Corp. to produce B-29s.

One of the storage structures, scheduled for completion in October will have a floor area of about 495,000 square feet and a canopy area of 13,300 square feet. Internal space to the ridge will approximate 9,540,000 cubic feet.

The other warehouse, due to be completed after the first of next year, will have a floor area of about 480,000 square feet and a canopy area of 13,800 square feet. Interior space will total approximately 9,328,000 cubic feet.

The Lockheed plant, which now employs 10,000 and is expected to employ 30,000 when full production begins, is just outside the corporate limits of Marietta, at Lockair (known as Bellcraft until last November) in Cobb County.

More Industrial Expansion Planned in Southeast

Nearly \$2,000,000 worth of additional plant expansions in the Southeast are scheduled to be carried out as a result of further certificates of necessity for tax amortization purposes on the proposed improvements.

The expansions include the development of railway and water transportation facilities as well as those for the manufacture of aircraft parts, parachutes and plexiglass sheets for the armed services.

Following are among the expansions:

Alabama—Moss Iron Co., Trafford, Ala., coke and coke chemicals, \$227,638.
Way Co., Savannah, railway transportation, \$151,788 and Southern States Equipment Corporation, Hampton, electric transmission and distribution equipment, \$186,000.

Florida—Simplex Piston Ring Manufacturing Co., Miami, aircraft parts, \$89,287.

Mississippi—W and N Tugboat Co., Jackson, water transportation, \$182,400.

South Carolina—Anderson Narrow Fabrics, Anderson, testing webbings for the armed services, \$6,707, and Charleston and Western Carolina Railway Co., Aiken County, railway transportation, \$88,858.

Tennessee—Patton-Tully Transportation Co., Memphis, water transportation, \$224,470, Rohm and Haas Co., Knoxville, three projects for plexiglass sheets for the armed service, \$604,875, \$50,500, and \$105,250, respectively.

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CHAMPION MFG. CO., Masonry Saws, and Blades.

GEO. HAISS MFG. CO., Conveyors, Loaders, Unloaders.

HENDRIX, Buckets.

HUBER CO., Rollers, Maintainers.

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"Jim was sure in a jam!"

— SAID THE
VETERAN CONTRACTOR



...The new factory needed water in a hurry,
but Jim had to lay the pipeline through a swamp.
Ditches filled up almost as fast as they were dug..



"Only one thing will do
any good," I told him. "Get
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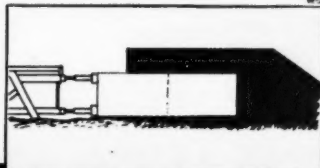
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Decatur, Dothan, Florence. FLA.: Miami,
Ocala (Florida Concrete Pipe Co.), St.
Petersburg, Tallahassee and Tampa. GA.:
Atlanta. TENN.: Nashville.

UNIVERSAL CONCRETE PIPE CO.

\$63,297,821 Awards Made for TVA Equipment

Tennessee Valley Authority announces award of contracts for major equipment and materials for three steam plants totalling \$63,297,821. The equipment is destined for the Colbert plant in north Alabama, the Kingston plant in east Tennessee, and the Shawnee plant in west Kentucky. Of the total, \$57,469,338 will go to manufacturers in Pennsylvania, Ohio, New York, New Jersey, Michigan, Massachusetts, Wisconsin, Illinois, and California.

Largest single awards are for turbo-generators. General Electric Co., Schenectady, N. Y., will make four, costing \$14,800,000. Westinghouse Electric Corp. will manufacture four at its Philadelphia and Pittsburgh plants for a total of \$11,880,000. Boilers comprise the next largest item. Babcock and Wilcox, Barberton, Ohio, will build six for the Colbert and Shawnee plants for \$13,657,844. Combustion Engineering-Superheater, Inc., of Chattanooga was awarded the contract for two boilers for the Kingston plant.

Other large contracts went to the following firms in the north and far west: Byron Jackson Company, Los Angeles, boiler feed pumps; Foster Wheeler Corp., Carteret, N. J., condensers; American Blower Corp., Detroit, draft fans and fly ash collectors; Sturtevant division of Westinghouse, Readville, Mass., forced and induced draft fans; Worthington Corp., Harrison, N. J., condenser circulating water pumps and deaerating feed-

water heaters; American Locomotive Co., Dunkirk, N. Y., feedwater heaters; Allis-Chalmers Manufacturing Co., Milwaukee, transformers and reactors; Westinghouse at Sharon and East Pittsburgh, transformers, switchboards, oil circuit breakers; General Electric, at Philadelphia, Schenectady, and Pittsfield, Mass., transformers, reactors, oil circuit breakers; I-T-E Circuit Breaker Co., Philadelphia, switchboards; Ingersoll-Rand Co., Phillipsburg, N. J., boiler feed pumps; Buell Engineering Co., Nazareth, Pa., fly ash collectors; Lummus Company, Honesdale, Pa., heaters; United Conveyor Co., Chicago, ash and dust handling equipment; American Bridge Co., Cincinnati, structural steel; Custodis Construction Co., New York, concrete chimneys.

\$6,853,473 Florida Bids

(Continued from page 18D)

Palm Beach County—State Project, Job No. 9368-150, Road No. S-809-A from SR 809 west approximately 2.004 miles; work consists of grading, paving and incidental items; Finley P. Smith, Fort Lauderdale, \$55,390; Campbell Paving Co., \$57,145; Brinson Construction Co., Tampa, \$60,939.

Jackson County—State Project, Job No. 5300-111, Road No. 271, from a point approximately 1.671 miles south of SR 10 north to SR 10; work consists of grading,

paving and incidental items; Coggin & Deermont, Chipley, Fla., \$28,791; R. H. Strickland, \$31,223; W. M. Boozier Construction Co., Marianna, Fla., \$34,481.

Bay County—State Project, Job No. 4617-104, Road No. 392, from a point approximately 300 mile south of SR 30 to southeast approximately .752 mile; work consists of grading, paving and incidental items; Florida Asphalt Paving Co., Panama City, Fla., \$21,453; Doyle Pope, Quincy, Fla., \$24,221; Smith Engineering and Construction Co., Pensacola, Fla., \$26,792.

New Director Named for Waterways Station

Assignment of Lt. Col. Carroll H. Dunn as director of the Corps of Engineers' waterways experiment station at Vicksburg, Miss., has been announced by the Department of the Army.

Colonel Dunn will assume his new duties about September 1 when he returns from the Far East Command, where he has been serving at General Headquarters since 1949. He will succeed Col. Herrol J. Skidmore, director of the waterways experiment station since 1950, who will enter the Armed Forces Staff College at Norfolk, Va.

Colonel Dunn was born in Lakeville, Ark., in August, 1916. He was graduated from the University of Illinois with a bachelor of science degree in mechanical engineering in 1938 and was commissioned in the regular army.

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THE VITAL AGGREGATE
IN LARGE AND SMALL
BUILDING JOBS
LOW IN COST • RUGGED AND
LONG-LASTING • AMPLE SUPPLY
Birmingham Slag Company
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Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)



ALABAMA

ANNISTON—Corps of Engineers, Mobile, received low bid from Andrew Dawson & Shenese, Anniston, at \$565,814 for miscellaneous facilities, Anniston Ordnance Depot.

ANNISTON—Corps of Engineers, Mobile, let contract to T. C. Bateson, Dallas, Tex., at \$4,968,547 for a 4 warehouses, Anniston Ordnance Depot.

BIRMINGHAM—Birmingham Gospel Tabernacle, received low bid of \$156,732 from Wilborn Construction Co., for tabernacle.

BIRMINGHAM—67th St. Methodist Church Congregation let contract to Richardson Construction Co., at \$120,000 for building.

BIRMINGHAM—Southern Research Institute received low bid of \$142,600 from J. F. Holley, for Ingalls Laboratory building No. 6.

BROOKLEY FIELD—Corps of Engineers, Mobile, received low bid of \$491,174 from W. A. McWaters, Montgomery for aircraft parking apron, Brookley Air Base.

HUNTSVILLE—Corps of Engineers, Mobile, let contract to Hewitt Contracting Co., Columbus, Ga., at \$243,000 for locomotive maintenance shop, Redstone Arsenal.

LANETT—City Board of Education plans elementary school, \$200,000.

LISTERHILL—Reynolds Metals Co. let contract to Foster & Croighton, Nashville, Tenn., for mill building, approximately \$500,000.

MOBILE—Corps of Engineers let contract to Peyton Higginson, Mobile, at \$244,528 for ORC Armory.

MONTGOMERY—J. Paul Gilmore plans completed office building, \$250,000.

MONTGOMERY—Housing Authority let contract to Shelby Construction Co., New Orleans, at \$2,779,620 for low rent housing project.

MONTGOMERY—Corps of Engineers, Mobile, let contract to C. F. Halsied, Montgomery, at \$126,880 for Armed Forces Examining & Induction Station, Old Holding & Reconsignment Point Depot.

MONTGOMERY—Silver Store plans modernization and expansion, \$500,000.

MONTGOMERY—City & Acting U. S. Property & Disbursing Officer for Alabama, received low bid from following for improvements, Dannelly Field, Ray Construction Co., Pensacola, Fla., at \$1,226,330 for Contr. 1—grading, paving and drainage.

SCOTTSBORO—Charles H. McCauley, Birmingham, Archt., has plans in progress for 50-bed hospital, \$700,000.

SHEFFIELD—Colbert County Hospital Board plans near addition to hospital, \$250,000.

TARRANT CITY—City Park & Recreation Board let contract to F. R. Hoar & Son, Birmingham, at \$113,000 for community building.

THEODORE—Navy Department, Charleston, S. C. let contract to Stanley W. Steveson Co., Mobile, at \$124,846 for replacing boiler and stack in heating plant, U. S. Naval Magazine.

TROY—Pike County Public Building Authority, received low bid from S. J. Curry, Albany, Ga., at \$339,367 for Court House.

TUSCALOOSA—Board of Trustees for District No. 1 Tuberculosis Sanatorium selected William I. Rosamond, Tuscaloosa, Archt., for 150-bed hospital, \$1,500,000.

TUSCUMBIA—City plans water works improvements, \$250,000.

ARKANSAS

BENTON—City plans additional water facilities, \$300,000.

CAMP CHAFFE—Corps of Engineers, Little Rock, let contract to W. A. Gray Construction Co., Shreveport, La., at \$99,740 for cold storage plant.

HOT SPRINGS—Corps of Engineers, Little Rock, received apparent low bid from Peterson, Garbi & Joseph, Inc., North Little Rock, at \$57,840 for ground storage water reservoir, Army and Navy General Hospital.

LITTLE ROCK—Corps of Engineers let contract to J. E. Pyle, Little Rock, at \$167,886 for photo reconnaissance laboratory, Adams Field.

LITTLE ROCK—City plans filter plant and installation of 4 miles of 42 inch water line, \$757,000.

DISTRICT OF COLUMBIA

ANACOSTIA—Navy Department, Washington, received low bid of \$110,700 from Southern Co., Washington, for addition and alterations to building 32, Naval Air Station.

BELLEVUE—Navy Department, Washington, received low bid of \$289,900 from Tuckman-Barbee Construction Co., Washington, D. C., for firing range, Bellevue Annex.

WASHINGTON—District Commissioners plans \$1,200,000 emergency Rock Creek Park sewer.

WASHINGTON—General Services Administration, let contract to F. S. Bowen Electric Co., Bladensburg, Md., at \$303,400 for repairs and improvements, Liberty Loan Building.

WASHINGTON—Public Buildings Service let contract to Otis Elevator Co., at \$310,740 for conversion to automatic elevators, Interior Building.

WASHINGTON—District Sewer Division requested \$18,000,000 next year for sewer program.

WASHINGTON—Public Buildings Service let contract to Young & Cray, Washington, at \$157,729 for renovation of surgical suite, Freedman's Hospital.

WASHINGTON—Navy Department received low bid from Joseph F. Nebel Co., Washington, at \$171,000 for reinforcing general utility shop, Gun Factory Bldg. 201.

WASHINGTON—District Government Departments asked for \$61,300,000 to build new schools and hospitals, sewers and water mains, streets and bridges, during 1964 fiscal year starting next July 1.

WASHINGTON—District Commissioners let contract to W. M. Chappell, Inc., Washington, at \$282,800 for Cleveland Park Branch Library.

WASHINGTON—Public Building Service, let contract to Stewart Bainum, Washington, at \$139,837 for mechanical improvements to chemical building 5, Bureau of Standards.

FLORIDA

BARTOW—Board of Polk County Commissioners let contract to W. H. Herrin, Lakeland, at \$360,380 for Polk County Hospital.

CAMP BLANDING—Corps of Engineers, Jacksonville, let contract to W. D. Owens Construction Co., Clearwater, at \$1,433,347 for rehabilitation of utilities systems.

CHATTAHOOCHEE—Sinclair Refining Co. plans terminal, \$700,000.

CHATTAHOOCHEE—Florida State Improvement Commission, Tallahassee, let contract at \$856,000 to Winchester Construction Co., Tallahassee, for ward buildings.

COCOA—Corps of Engineers, Jacksonville, let contract at \$784,054 to J. Hilbert Sapp, Inc., Orlando, for missile shop interiors and miscellaneous utilities, Air Force Test Center.

DADE COUNTY—Siemens Bros., Inc., Coral Gables, let contract to C. R. Clark, Miami, Fla., at \$416,895 for motel.

DADE COUNTY—Dade County Board of Public Instruction, Miami, let contract at \$583,567 to Edwards Construction Co., Coral Gables, for South Dade High School.

DADE COUNTY—Board of Public Instruction let contract at \$275,000 to Willis, Inc., Miami, for Dorsey Junior High School.

EGLIN FIELD—Corps of Engineers, Mobile, Ala., let contract at \$303,620 to Chavis Construction Co., Pensacola, for bachelor officers quarters, Eglin Base.

EGLIN FIELD—Corps of Engineers, Mobile, let contract to Paul Smith Construction Co., Tallahassee, at \$2,280,000 for installation building, Eglin Base.

EGLIN FIELD—Corps of Engineers, Mobile, Ala., let contract to J. A. Jones Construction Co., Charlotte, N. C., at \$3,967,000 for airman's quarters and mess facilities, Eglin Base.

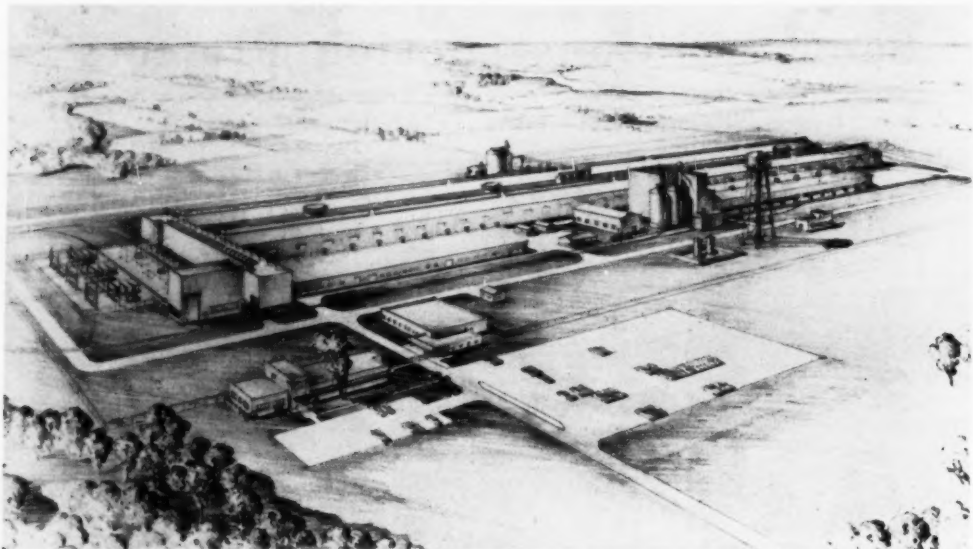
FROSTPROOF—Clinton Foods, Inc., announced plans for \$1,000,000 concentrate plant.

GAINESVILLE—City plans expansion, municipal light plant, \$1,500,000.

JACKSONVILLE—Acting U. S. Prop. & Distribution Officer, St. Augustine, let contract at \$538,560 to Hilyer & Lovan for hangar.

JACKSONVILLE—Navy Department, Charleston, S. C., let contract to J. Hilbert

(Continued on page 24)



Above—Perspective of the \$30,000,000 aluminum reduction plant now being erected at Arkadelphia, Ark., by Reynolds Metals Co. To be known as the Robert P. Patterson works, the plant will have a capacity of 110,000,000 pounds of aluminum annually. Completion is scheduled early in 1953.

South's Awards More Than Double in July

SOUTHERN construction awards in July were valued at \$1,518,141,000, or twice the figure established in July of last year and almost four times the \$357,448,000 recorded for June of the current year. Industrial, public, heavy engineering and highway and bridge work all showed substantial increases, while private building declined.

The July figure includes approximately \$923,000,000 for the two huge atomic energy projects announced late in the month, this bolstering the total to a peak

beyond the level of January of 1951 when other similar projects were revealed for the South. Without the atomic projects, the July total represented a sixty-six per cent gain over the June aggregate.

Components of the July total were \$1,121,413,000 for industrial projects, this including the atomic work; \$165,601,000 for public building; \$98,515,000 for heavy engineering construction; \$92,177,000 for highways and bridges and \$40,435,000 for private building. Percentage increases were 676, 147, 128 and 65 for the first

four-named categories in July. Private building declined thirteen per cent.

The two atomic energy projects were the major contributors to the \$1,121,413,000 industrial total. These were a \$464,000,000 addition to gaseous diffusion plant at Oak Ridge, Tenn., and a \$459,000,000 project of a similar nature at Paducah, Ky. The only active private project of near that magnitude is the \$100,000 aluminum plant near Rockdale, Texas.

Other large southern industrial jobs include the \$29,624,000 Dynel plant of Carbide and Carbon Chemical Corp. plant at Spray, N. C.; a \$31,000,000 chemical plant at Luling, La., for Lion Oil Co.; Chicago Pneumatic Tool Company's \$4,500,000 oil well equipment plant at Fort Worth, Texas; a \$3,000,000 expansion at Lake Charles, La., by the Columbia-Southern Chemical Corp., as well as a multi-million dollar electric meter plant at Raleigh, N. C.

The \$165,601,000 for public building was the second largest among the July totals. In addition to being almost one and one-half times larger than the total for the preceding month, it is more than twice the size of the total for the comparable month of 1951. Included in the figure are \$139,200,000 for government buildings and \$26,401,000 for schools. Both are up when compared with the June of this year and July of 1951.

Heavy engineering, also one of July's strong contributors to the upward trend, embraced \$71,144,000 for dams, drainage, earthwork and airports, a rise of 108 per cent; the \$16,614,000 for federal electric projects, an increase of 302 per cent, and

Below—A \$750,000 building has been constructed at Dallas for the B. F. Goodrich Co. by Trammell Crow, who has recently finished it and is constructing under similar lease agreements for Armstrong Cork Co., Parker Pen Co., Emerson Radio and Phonograph, Collins Radio Co., Black and Decker Manufacturing Co., International Printing Ink division of Interchemical Corp., Twin Disc Clutch Co., Kellogg Switchboard and Supply Co., and the Federal Electric Co. Containing 126,000 square feet, the Goodrich building has steel pipe columns, fireproofed by filling with concrete grout, and framed with long span built-up trusses. The 13,000-square foot office building on the second floor is air conditioned for both summer and winter with Worthington equipment. Fenestra windows were installed.





Above—Creation of the Inter-American Center Authority has been authorized by the Florida State Legislature and details are now being formulated to finance construction of the multi-million dollar project at Miami, Fla. According to a statement issued by the new organization, the City of Miami will dedicate a \$2,600,000, 1,600-acre tract for the site and the State of Florida will provide roads, bridges and culverts at a cost of \$2,000,000.

the \$10,757,000 for sewer and water work, up 115 per cent, when compared with the preceding month's value levels.

Highway and bridge projects in the contract stage, as reported during July, totaled \$92,177,000, a peak for the South, according to a study of currently tabulated records. The nearest total so far this year is the \$72,699,000 of May. Last year's peak in the highway field was September, with its \$79,840,000 figure. Totals for individual months of other post-second world war years were all of lesser size.

The July private building figure includes \$24,500,000 for residential construction; \$8,502,000 for assembly buildings; \$4,703,000 for office buildings and \$2,730,000 for commercial buildings. Residential construction represents a rise of more than one per cent. Office buildings were also up, the increment being about 149 per cent. Commercial building and assembly structures, mostly churches these days, were lower in value.

July's \$1,518,141,000 brought the total value of southern construction contracts to a much stronger position. The total

for the first seven months is \$3,981,406,000. Last year at this time, it was \$4,102,835,000. The spread between the total January-July totals is between two and three per cent.

In the seven-month total are \$1,982,784,000 for industrial projects; \$649,427,000 for public building; \$489,545,000 for private building; \$452,693,000 for heavy engineering projects and \$406,957,000 for highways and bridges.

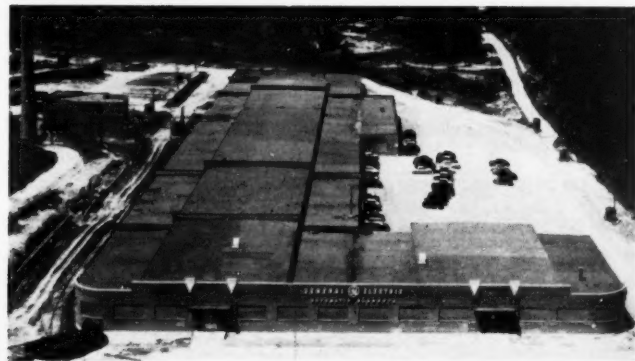
The industrial value figure is slightly larger than it was at the end of the first seven months of last year, when value of such projects was reported at \$1,978,271,000. Two other categories—public building and highways and bridges—are also stronger. The increases were 26 per cent and 11 per cent, respectively.

New construction expenditures throughout the country in July reached a record total of almost \$3,100,000,000, according to preliminary estimates of the federal Bureau of Labor Statistics and the Building Materials division of the Department of Commerce, which said "the record dollar volume of work put in place indicated that the steel dispute had little adverse effect on the tempo of on-site operations."

The July country-wide figure, it was announced, topped the June level by three per cent and that of July last year by seven per cent. Seasonal advances in all major categories brought the private construction total to nearly \$2,000,000,000. One-half of the private total consisted of outlays for new residential building, which were reported up four

(Continued on page 54)

Below—New General Electric blanket plant recently placed in operation at Asheboro, N. C. The plant is expected to be the world's largest producer of automatic blankets and heating pads, with a total output of over 1,000,000 annually.



“Dirt-movin’est tractor I ever saw!”



BIG RED CHAMPS! The TD-24s with 148 drawbar horsepower do more work per day — they have more horsepower and speed than any other crawler on the market. And they have Planet Power Steering, for pivot-turns, feathered-turns or turns with power on both tracks!



Big Red TD-24s distinguish themselves building levees to control Missouri River



GOVERNMENT INSPECTOR. George Lemp, talks it over with prime contractor Paul Crawley (right).

Near St. Charles on the Missouri River, the levees failed against the flood of '51. But Paul Crawley rebuilt them so they stood firm against the worst the river could do in 1952.

Crawley's contract called for moving 940,000 cubic yards of dirt. A big job, a tough job, in the bitter dead of winter. And for Crawley's money, the International TD-24s proved to be real Champs.

"They're the dirt-movin'est tractors I ever saw," he reports. "There's no other crawler to compare with 'em for daily work production!"

"They climbed the levee with full loads with no special ramps of any sort. They'd dump their loads, turn around on the 8-foot crown and go back down for another load. It was work that called for superior power and steering, and my TD-24s had it!"

Get the low-down on TD-24 performance from your International Industrial Distributor. You'll be a TD-24 man yourself from then on in!

INTERNATIONAL HARVESTER COMPANY
CHICAGO 1, ILLINOIS



CRAWLEY'S CRAWLERS did the job in a sea of winter mud that froze from time to time.



INTERNATIONAL

POWER THAT PAYS

Southern Construction Projects

(Typical and Important Reports Excerpted from Daily Construction Bulletin)

FLORIDA

(Continued from page 19)

Sapp, Orlando, at \$442,973, Item 3, for general storehouse, Cecil Field.

KEY WEST—Navy Department, Charleston, S. C., let contract to Fred Howland, Inc., Miami, at \$1,624,642 for U. S. Fleet Sonar Station, Naval Station.

KEY WEST—Navy Department, Charleston, S. C., let contract to R. H. Wright & Son, Fort Lauderdale, at \$1,263,000 for plane parking apron, L. T. A. mooring facilities, taxiway, taxiway lighting system, Naval Air Station, Boca Chica Field.

KEY WEST—Navy Department, Charleston, S. C., let contract to Fred Howland, Inc., Miami, at \$614,697 for public works shop, transportation building, cold and dry storage building, Air Station, Boca Chica Field.

Corps of Engineers, Jacksonville, let contract to Reed Construction Corp., Miami Beach, at \$262,617 for construction structure 29, including gates and other work, CVeng. 82, Central and Southern Florida Flood Control project, also let contract to Troup Bros., Inc., Miami for 6.6 mi. section Canal 9, Central 7, \$173,875.

KEY WEST—Navy Department, Charleston, S. C., received low bid from Fred Howland, Inc., Miami, at \$1,624,642 for Fleet Sonar School, Naval Station.

MIAMI—Flagler Memorial Park plans mausoleum \$550,000.

ORLANDO—Corps of Engineers, Jacksonville, received low bid from J. Hilbert Sapp, Inc., Orlando, at \$196,943 (frame construction) at \$199,391 (masonry construction), for training buildings, Pinecastle Base.

PENSACOLA—Navy Department let contract to Noonan Construction Co., Pensacola, at \$412,340 for resurfacing bituminous pavement, Auxiliary Station.

PENSACOLA—Medical Center, Inc., let contract to Dyson & Co., at \$465,197 for building.

SARASOTA & VENICE—Sarasota County Board of Public Instruction, Sarasota, received low bid from Larsen Brothers & John Rasmussen, Bradenton, at \$208,000 for Venice Elementary School and \$299,000 for Phillip Shores Elementary School at Sarasota.

ST. PETERSBURG—Pinellas Industries, Inc., plans \$500,000 plant for manufacturing of concrete products.

SANFORD—G. Medwin Peek, Deland, Archt., completing working drawings for Bert Fish Memorial Hospital, \$600,000.

TAMPA—Corps of Engineers, Jacksonville, let contract to Clyde J. Keyes, St. Petersburg, at \$282,240 for additional bulk fuel storage facilities, MacDill Base.

TUNNALL FIELD—Corps of Engineers,

Mobile, Ala., received low bid from Bowen Buggitt Co., Quincy, at \$526,340 for aircraft parking apron and warehouse.

WEST PALM BEACH—Corps of Engineers, Jacksonville, let contract to Crabtree Construction Co., at \$346,372 for rehabilitation of utilities, Phase 4, International Airport.

WEST PALM BEACH—Corps of Engineers, Jacksonville, let contract at \$661,999 to Edelblut Construction Co., Inc., for rehabilitation of building & facilities, Phase 4—Section A, International Airport.

GEORGIA

ALBANY—Corps of Engineers, Savannah, let contract to P. & W. Construction Co., Atlanta, at \$125,562 for ammunition storage igloos, Turner Base.

ALBANY—City received low bid of \$281,099 from Expat Paving & Construction Co., Savannah, for sewer extension.

ALBANY—Navy Department, Charleston, S. C., let contract to T. H. Pearce & Co., Columbus, at \$516,000 for sewage plant, Marine Depot.

ALBANY—Navy Department received low bid of \$648,000 from Thompson & Street, Grannis & Sloan & Ralph Wattlinger, for fire station and motor transport shop, Marine Corps Depot.

ASHBURN—Turner County Hospital Authority received bid of \$339,000 from H. W. Ivey Construction Co., Atlanta, for hospital.

AUGUSTA—Veterans Administration, Washington, D. C., received low bid of \$152,140 from Winger Construction Co., Ottumwa, Iowa, for alterations to boiler plant at Veterans Hospital.

AUGUSTA—Navy Department, Charleston, S. C., received low bid of \$154,000 from Jackson & Brittain, Savannah, for addition naval reserve training center.

AUGUSTA—Richmond County & Augusta City Council received low bid from George L. Fuller, Augusta, at \$394,101 for Health Center.

BARNSBORO—Department of Public Welfare, Atlanta, let contract at \$108,000 to Jack Culpepper, Tallahassee, Fla., for warehouse factory for the Blind.

BLACKHEAR—Pierce County let contract at \$262,956 to Delta Construction Co. & Paul H. Keasling, Waycross, for hospital.

BRIENSWICK—S. J. Curry & Co., Albany, has general contract at \$927,927 for hospital.

COLUMBUS—First Columbus National Bank Building received low bid of \$139,224 from D. S. McClanahan & Son, Columbus, Miss.

COLUMBUS—Sunshine Biscuit Co. plans plant, estimated cost \$5,000,000, including equipment.

DECATUR—Columbia Presbyterian Church

Congregation received low bid of \$138,387 from McDonough Construction Co., Atlanta, Ga., for school building.

FORT BENNING—Corps of Engineers, Savannah, received low bid from J. A. Jones Construction Co., Atlanta, at \$11,888,921 for permanent troop housing.

FORT BENNING—Post Quartermaster received low bid from Murphy Found Construction Co., Columbus, at \$252,759 for replacement of floors, roofing, steps, porches, doors.

FORT BENNING—Corps of Engineers, Savannah, let contract to J. A. Jones Construction Co., Atlanta, at \$11,888,921 for miscellaneous buildings and appurtenances.

FORT BENNING—Corps of Engineers, Savannah, let contract to Williams Construction Co., Columbus, at \$211,344 for gas distribution, water distribution, sanitary sewer system.

FORT BENNING—Corps of Engineers, Savannah, let contract at \$534,925 to T. H. Pearce & Co., Columbus, Ga., for alterations to BOQ buildings.

FORT BENNING—Corps of Engineers, Savannah, let contract at \$158,006 for trailer park and facilities.

FORT VALLEY—Peach County Hospital Authority let contract at \$559,064 to H. G. Tinker, Macon, for Hospital.

MACON—Jackson & Brittain, Savannah, have contract at \$154,000 for alterations to existing building and construction of new building, Naval Ordnance Plant.

MILLEDGEVILLE—State Department of Public Welfare, Atlanta, received low bid of \$1,025,000 from C. L. Rhodes, Decatur, for hospital.

OCHILIA—Irwin County let contract at \$254,899 to Delta Construction Co., & Paul H. Keasling, Waycross, for hospital.

RABUN GAP—Rabun Gap-Nachoochee School received low bid of \$138,740 from Presley Construction Co., Toccoa, for chapel and library.

SAVANNAH—Savannah District Authority plans new \$4,000,000 railway passenger terminal.

SAVANNAH—Seaboard Air Line Railroad Company plans new classification yards and repair shops, \$3,500,000.

SAVANNAH—Corps of Engineers let contract at \$137,348 to M. B. Kahn Construction Co., Columbia, S. C., for telephone building.

SAVANNAH—Department of the Army, Marietta, received low bid from Nello L. Teer Co., Durham, N. C., at \$793,251 on asphalt and at \$889,951 on concrete, for extension of runways, Travis Field.

SYLVESTER—City received low bids for sewer system improvements, Section I, sewer lines, M. L. Prescott, DeFuniak Springs, at

Below—Construction progress on the \$5,000,000 plant being built at Calvert City, Ky., by B. F. Goodrich Chemical Co., a division of the B. F. Goodrich Co. Being located on a 175-acre tract, the plant will consist of three buildings to house manufacturing operations, service and maintenance facilities, power plant and offices. The process building is shown in the middle of the picture, with the steelwork of the power plant at the extreme left and the service building at the far right. To the left of the process building is the hydrogen plant foundation; in the right foreground, the beginning of the tank farm.





Above—Baltimore and Ohio Railroad's new \$4,000,000 tunnel through the West Virginia mountains was recently placed in service. Replacing an old tube built almost a hundred years ago, the new tunnel is 3,300 feet long, 31 feet wide and 28 feet high. It penetrates the ridge separating Simpson Creek and West Fork River. The tunnel, the entrance to which is shown above, is lined with concrete. Its spring line is 12 feet six inches above the top of the rail. Below that point, the width between walls is 31 feet. Two tracks are installed on 14-foot centers. Bates & Rogers Construction Corp., of Chicago, were the general contractors.

\$133,744 and Section II, treatment plant, pumping station, Durham Plumbing & Heating Co., Quincy, Fla., \$69,133.

THOMASVILLE—Warner Brothers, Bridgeport, Conn., let contract to H. & H. Construction & Supply Co., Thomasville, at \$400,000 for enlargement of plant.

TIFTON—Tift County Hospital Authority let contract at \$311,000 to Jack Culpepper, Tallahassee, Fla., for addition to Tift County Hospital.

VALDOSTA—Valdosta Hospital Authority received low bid of \$1,255,282 from Ray M. Lee Co., Atlanta, for Lowndes County Hospital.

VALDOSTA—Corps of Engineers, Savannah, let contract to Southern Construction Co., Augusta, at \$843,917 for rehabilitation and modification of medical facilities and base facilities, Moody Base.

VALDOSTA—Corps of Engineers, Savannah, let contract to J. D. Manley Construction Co., Leesburg, Fla., at \$141,815, Item I, to W. L. Cobb Construction Co., Decatur, at \$11,970 on Sch. 2 and to J. E. Moses Uvide, at \$31,234 on Sch. 3, for pavements and railroads, Moody Base.

KENTUCKY

Proposed military construction program in Kentucky includes: Fort Campbell, Clarksville, Tenn., at \$5,125,000; Fort Knox, Louisville, \$16,902,000; Godman Air Force Base, Fort Knox, \$1,145,000.

ASHLAND—C. H. Jimison & Sons, Huntington, W. Va., have contract at \$820,203 for Our Lady of Bellefonte Hospital.

ASHLAND—State Department of Health announced approval of Public Health Center, \$154,764.

BARBOURVILLE—Union College plans \$1,270,000 school expansion program.

FORT CAMPBELL—Corps of Engineers,

Louisville, let contract to G. & W. Construction Co., Nashville, Tenn., at \$196,279 for bridges.

FORT KNOX—Corps of Engineers, Louisville, let contract to Kenhill Construction Co., Charleston, W. Va., at \$136,441 for alterations hospital.

FRANKFORT—State Aeronautics announced award of contract to S. J. Boone Construction Co., Owensboro, at \$201,000 for improving Kentucky Dam Airfield.

LEXINGTON—University of Kentucky plans men's dormitory and dining hall, \$2,000,000.

PADUCAH—U. S. Atomic Energy Commission, Washington, D. C., announced award of contract to E. H. McGraw and Co., Hartford, Conn., for \$459,000,000 addition to uranium-235 separation plant now under construction.

PIKEVILLE—State Department of Health announced approval of Public Health Center, \$144,000.

LOUISIANA

Proposed military construction program in Louisiana includes: Barksdale Air Force Base, Shreveport, at \$3,356,000; Lake Charles Air Force Base, Lake Charles, \$12,098,000; Selman Field, Monroe, \$23,755,000; Houma Guntery Range, Houma, \$3,892,000; Alexandria Municipal Airport, Alexandria, \$4,324,000; Camp Polk, Leesville, \$608,000; New Orleans Army Base, New Orleans, \$60,000.

ALEXANDRIA—Rapides Parish School Board let contract at \$261,923 to Cecil Chaudoir for Prescott Road School and A. A. Gremillion & Co., at \$254,813 for Texas Avenue School.

ALEXANDRIA—Corps of Engineers, Little Rock, Ark., let contract to C. & B. Construction Co., Hays Springs, Ark., at \$287,927 for bachelor officers' quarters, Alexandria Base.

BATON ROUGE—Corps of Engineers, Galveston, Tex., received apparent low bid from William A. Smith Construction Co., Houston, Tex., at \$282,882 for reconstruction of trackage at Baton Rouge Depot.

BATON ROUGE—Corps of Engineers, Galveston, Tex., received apparent low bid from G. E. Bass & Co., Jackson, Miss., at \$600,979 for new facilities, Baton Rouge Depot.

BATON ROUGE—Corps of Engineers, Galveston, Tex., let contract to Barksdale and LeBlanc, Baton Rouge, at \$416,911 for rehabilitation, warehouses, fire prevention and protection facilities and streets and parking areas, Baton Rouge Depot.

BATON ROUGE—Ethyl Corporation Plant received low bid of \$524,000 from Perrillat-Rickey Construction Co., Inc., New York, for addition to medical and personnel building.

BATON ROUGE—St. Anthony of Padua Congregation let contract to Charles Carter & Co., Inc., Baton Rouge, at \$316,000 for church.

BELLE CHASSE—Corps of Engineers, New Orleans, let contract to Keller Construction Corp., New Orleans, at \$947,203 for Plaquemines Parish Pumping Station.

CAMP POLK—Corps of Engineers, Galveston, Texas, received apparent low bid of \$658,972 from Sandel Lastrapes, Shreveport, for rehabilitation and extension of facilities.

CAMP POLK—Corps of Engineers, Galveston, Tex., let contract to United Enterprises, Inc., New Orleans, at \$519,838 for rehabilitation of 113 company type kitchens and converting a warehouse into a bakery.

CONCORDIA AND CATAHOULA PARISHES—Corps of Engineers, Vicksburg, Miss., received low bid of \$423,792 from Associated Contractors, Inc., Monroe, La., for approx. 1,118,000 cu. yards of earthwork.

(Continued on page 26)

Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

LOUISIANA

(Continued from page 23)

approx. 54,000 cu. yds. of ditch and channel excavation.

FERRIDAY—Ferriday School District approved \$315,000 bond issue for negro schools.

JONESVILLE—Corps of Engineers, Vicksburg, Miss., received low bid of \$123,792 from Associated Contractors, Inc., Monroe, La., for 1,118,000 cu. yds. earthwork.

LAKE CHARLES—Columbia-Southern Chemical Corp. let contract to Mid-Valley Utility Construction, Inc., for present construction \$3,000,000 expansion.

NEW IBERIA—Iberia Parish School Board sold \$1,250,000 bond issue to Equitable Securities Corp., New Orleans, for schools.

NEW ORLEANS—Corps of Engineers, Galveston, Texas, let contract at \$1,325,000 to R. P. Farnsworth & Co., Inc., New Orleans, for expansion of engine test cell building and facilities at Michoud Ordnance Plant.

NEW ORLEANS—Corps of Engineers, Galveston, Tex., let contract to A. C. Gaudin Co., Detroit, Mich., at \$288,200 for air conditioning and engineering building and office building, Michoud Ordnance Plant.

NEW ORLEANS—Louisiana University of the South let contract to Hogan Brothers, Inc., for physical education building, \$500,000.

NEW ORLEANS—Orleans Parish School Board plans new negro school, \$365,000.

NEW ORLEANS—Crown Cork and Seal Company, Baltimore, let contract to Hogan Bros. at \$250,000 for warehouse.

PORTE COLEGE PARISH—Police Jury let contract to Hebert Bros. Plaquemine, at \$374,649 for natural gas system.

PORT SULPHUR—Corps of Engineers, New Orleans, received low bid of \$398,500 from Hough-Cowgar for approx. 5000 squares of framed willow mattress revetment and approx. 600 squares of bank paving at Freeport sulphur budding dock.

SCOTLANDVILLE—Board of Education, Baton Rouge, let contract at \$794,800 to Caldwell-McCann, Baton Rouge, for agricultural and science building on campus of Southern University.

SHREVEPORT—Corps of Engineers, Little Rock, Ark., let contract at \$1,431,506 to S & L Construction Co., Dallas, for airmen's dormitories and mess and administration buildings, Barksdale Base.

SHREVEPORT—Corps of Engineers, Little Rock, Ark., let contract to J. A. Jones Construction Co., Shreveport, at \$1,088,000 for additional warehouse, Barksdale Base.

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SHREVEPORT—Corps of Engineers, Little Rock, Ark., let contract to J. A. Jones Construction Co., Shreveport, at \$1,088,000 for additional warehouse, Barksdale Base.

Ark., let contract to Campbell & Kay, Tyler, Tex., at \$396,224 for grading, drainage, paving and railroad, Barksdale Base.

WELSH—Jefferson Davis Parish School Board, Jennings, let contract at \$150,187 to E. E. Rabalais & Sons, Bunkie, for Welsh Elementary and Colored Schools.

MARYLAND

Chesapeake and Potomac Telephone Co. plans expenditures of \$4,347,000 for improvement of facilities in Maryland.

Congress approved the following for military construction: Aberdeen Proving Ground, Aberdeen, \$5,419,000; Army Chemical Center, Edgewood, \$800,000; Camp Detrick, Frederick, \$17,197,000; Fort George G. Meade, \$335,000; Naval Academy, Annapolis, \$1,800,000; Naval Ordnance Laboratory, White Oak, \$379,000; Allegheny Ballistics Laboratory, Cumberland, \$593,000.

Corps of Engineers plans requesting Congress for authority to deepen Chesapeake and Delaware canal to 35 feet; provision of anchorage basin in Elk River, Md., about 2½ miles above river's mouth at the bay, \$87,000.

ABERDEEN—Corps of Engineers, Baltimore, let contract to D. H. Dave & Gerben Co., Brooklyn, N. Y., at \$1,325,000 for six school shop buildings, Proving Ground.

ABERDEEN—Corps of Engineers, Baltimore, let contract to Hadley Contracting & Construction Co., Philadelphia, Pa., at \$141,220 on Items 1, 2 and 5, improvements to Hospital, Proving Ground.

ANNAPOLIS—City plans parking lot, \$140,000.

ANNE ARUNDEL COUNTY—Anne Arundel County School Commissioners, Annapolis, received low bid of \$464,000 from Mullan Construction Corp., Baltimore, for Lake Shore Elementary School.

BALTIMORE—Maryland Jockey Club submitting to State Racing Commission plans for a \$250,000 program, Pimlico Race Track.

BALTIMORE—Corps of Engineers let contract to Lloyd E. Mitchell, Inc., at \$319,943 for rehabilitation of boiler plant, Fort Holabird.

BALTIMORE—Board of Estimates let contract at \$1,120,270 to Square Construction Co., for sanitary sewers, Contract No. 49.

BALTIMORE—Housing Authority received low bid of \$135,024 from Smith, DeCorse & Christhill for site improvements.

BALTIMORE—Board of Estimates let contract at \$170,900 to Wildberger-Best Construction Co. for Patterson Park High athletic field.

BALTIMORE—Department of Correction seeking \$11,966,693 for work at the five penal institutions.

BALTIMORE COUNTY—County Board of Education let contract at \$337,966 to Joseph F. Hughes & Co., Baltimore, for addition to Milford Elementary School.

BALTIMORE COUNTY—Baltimore County Board of Education, let contract at \$399,233 to Joseph F. Hughes & Co., Baltimore, for addition to Milford Mill Road School.

BALTIMORE COUNTY—Board of Education of Baltimore County let contract to Wildberger-Best Construction Co., Baltimore, at \$284,350 for addition to Westown Elementary School.

BALTIMORE COUNTY—Baltimore County Commissioners let contract at \$457,173 to Lawrence Construction Co., Inc., Baltimore, for addition to Maiden Choice Elementary School.

BALTIMORE COUNTY—County Commissioners, Towson, received low bids for sewer and water mains: A. B. Ligon, \$227,012; B. E. Peter D. Adamo & Son, Baltimore, \$242,536; C. Bid, John Matriciani Construction Co., Inc., Baltimore, \$261,676; D. B. Ligon, \$235,887; E. B. Ligon & Ligon, \$235,887.

BALTIMORE COUNTY—County Commissioners, Towson, let contract at \$173,150 to Leo Butler & Sons, Baltimore, for sewerage force main and intercepting and water transmission main, Contract No. 263 S & W.

BALTIMORE COUNTY—Chattin Corp. let contract to M. J. Brothers, Inc., Baltimore, for building, \$300,000.

BEL AIR—Harford County Commissioners gave tentative approval to a proposed \$160,000 Health and Welfare Center.

CARDROCK—Post Quarter Department let contract to F. H. Martell Co., Inc., Washington, D. C., at \$1,648,800 for wind tunnel, David Taylor Model Basin.

CHESTER TOWNSHIP—Kent County Board of Education received low bid of \$230,115 from Phillips and Thompson, for alterations and addition to Chester town Elementary School.

EDGEWOOD—Post Quarter Corps of Engineers let contract at \$118,720 to T. B. Gatch & Sons, Inc., Baltimore, for resurfacing existing roads, Army Chemical Center.

FORT GEORGE G. MEADE—Corps of Engineers let contract to Kahn Engineering Co., Washington, D. C., at \$160,547 for meat cutting and rendering building.

FORT GEORGE G. MEADE—Corps of Engineers, Baltimore, received low bid for rehabilitation of kitchens, mess halls, B. O. Q's and heating plant, John K. Ruff, Baltimore, Basis bid A, \$804,000.

FORT GEORGE G. MEADE—Corps of Engineers, Baltimore, plans advertising for bids about September 1, for communications and relay center building, \$800,000.

FORT GEORGE G. MEADE—Post Quartermaster, Baltimore, let contract to Stewart Baimun, Washington, D. C., at \$262,100 (Alternates under Item 2 A), for rehabilitation of and revisions to condensate return system in hospital area.

FORT RITCHIE—Corps of Engineers, Washington, D. C., let contract to John McShain, Inc., Arlington, Va., at \$1,222,550 for auxiliary site "A", Fort Ritchie.

FORT RITCHIE—Corps of Engineers, Washington, D. C., let contract to John McShain, Inc., Philadelphia, Pa., at \$254,400 for microwave relay station "A".

INDIAN HEAD—Navy Department, Washington, D. C., received low bid from W. M. Chappell, Washington, D. C., at \$295,000, Item 1, for additional facility; Spec. 34449.

PATUXENT RIVER—Congress approved \$4,337,000 for military construction, Naval Air Test Center.

PERRYVILLE—Ceil County Board of Education received low bid of \$263,263 from Young & Adams, Inc., for additions to Perryville High School.

ROCKVILLE—Montgomery County Board of Education has been allotted Federal aid grant of \$1,829,375 for new high school.

MISSISSIPPI

ABERDEEN—Corps of Engineers, Mobile, Ala., let contract to W. S. Co., Sons, Raleigh, at \$148,480 for rehabilitation of buildings at Air Force vehicle storage branch.

COLUMBUS—City let contract to Phillips Concrete Products Co., at \$185,000 for construction of Columbus-Lowndes County Airport.

FAYETTE—Mayor let contract to Dixie Construction Co., Inc., Eads, Mo., at \$189,785 for natural gas distribution system.

GULFPORT—City received low bid of \$121,952 from W. R. Fairchild Construction Co., Hattiesburg, Miss., for additional port improvement facilities.

GULFPORT—Navy Department, Charles-

(Continued on page 28)

U. S. Plywood Branch Opened at High Point

United States Plywood Corp. has opened a new, modern sales and distribution unit at High Point, N. C., according to S. W. Antovine, vice president-sales director.

The new sales and distribution unit, located at Prospect Street and Railroad, replaces a smaller building which served the Carolina area with Weldwood Plywood and plastic products since 1941.

Containing more than 27,000 square feet of floor area, the new concrete and brick structure is 140 feet long and 190 feet wide. Ample shipping and loading facilities are provided by a private rail siding

and covered truck-loading platform.

An adjoining office building, housing the sales and administrative staffs, is decorated with installations of w exotic hardwood plywood and other specialties comprising the Weldwood family of products. Offices also serve as showrooms for visiting builders, architects and homeowners.

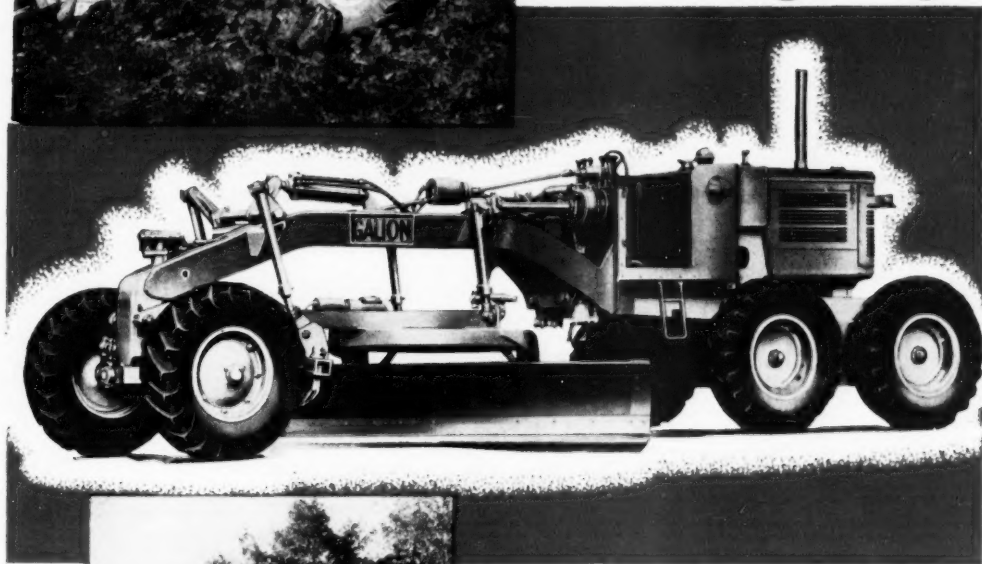
Charles W. Perry, former president of Perry Plywood Corp., and a veteran of fourteen years' service with U. S. Plywood, has managed the High Point sales and distribution unit since it was opened in 1941.

Below—United States Plywood Corp. has opened a new, modern sales and distribution branch at High Point, N. C. The new distributing center is in charge of Charles W. Perry.





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Galion Motor Graders have the power, drive, and weight to really make the dirt "boil" off the moldboard.

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- Easiest handling with combination manual and hydraulic booster steering.
- Highest degree of flotation with large front tires, same size as used on rear.

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Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

MISSISSIPPI

(Continued from page 26)

TON, S. C. let contract to Hyde Construction Co., Jackson, at \$183,000 for pavement of open storage area, Naval Construction Battalion Center.

JACKSON. Board of Trustees of Jackson Municipal School District let contract at \$166,847 to L. A. Harvey for alterations and additions to Lee, Davis, Watkins and Smith Robertson Schools.

MERIDIAN. City Council let contract to L. B. Friester and Son, Meridian, at \$1,151,354 for clay sewer pipe manufacturing plant to be leased to W. S. Dickey Clay Manufacturing Co.

POPLARVILLE. Board of Supervisors of Pearl River County sold \$450,000 Supervisors District 1, 2 and 3 industrial bonds to Leland Speed Co., Jackson.

ROSEDALE. Board of Trustees of Rose-dale Consolidated School District let contract at \$104,000 to O'Brien & Padgett, Memphis, Tenn. for buildings.

STARKEVILLE. City approved \$200,000 bond issue for new negro school and improving Starkeville High School facilities.

WHITEFIELD. State Building Commission, Jackson, let contract at \$207,456 to B. E. Walker, Jackson, for sanitary sewerage and treatment works, Mississippi State Hospital.

MISSOURI

CHAMONIS. Central Electric Power Cooperative erecting power plant, \$3,500,000; Kullian Corp., Engers, Philadelphia.

DUNKLIN COUNTY. Corps of Engineers, Memphis, Tenn., let contract to S. J. Cohen, Hlytheville, Ark., at \$132,000 for placement of approx. 500,000 cu. yds. earthwork in levee constr. above Kennett Mo.

FARRA. Franciscan Brothers of Sacred Heart of Jesus, St. Joseph's Hill Infirmary, let contract to William F. Lamping, Shrewsbury, for convalescent, \$52,000.

INDEPENDENCE. Corps of Engineers, Kansas City, let contract to Bennett Construction Co., Kansas City, at \$1,441,375 for additional facilities, Part 2, Lake City Arsenal.

JEFFERSON CITY. State Board of Public Buildings let contract to Roy Scheperle Construction Co., at \$298,550 for office building.

KANSAS CITY. Corps of Engineers let contract to Tetyak Young Construction Co., Overland Park, Kans., at \$525,934 for water distribution system and facilities, Grandview Base.

KANSAS CITY. Corps of Engineers let contract to Long Construction Co., Kansas City, at \$193,000 for jet fuel facilities, Grandview Base.

KANSAS CITY. Corps of Engineers let contract to Winn Senter Construction Co., at \$172,262, Item 1, in connection with general warehouse and navigational aids, Grandview Base.

KIRKWOOD. Lutheran Church of Atonement has plans in progress for church, \$75,000.

NEW MADRID COUNTY. Corps of Engineers, Memphis, Tenn., let contract to Cook Construction Co., Jackson, Miss., at \$67,000 for levee work in St. Johns Levee and drainage district.

PAYNESVILLE. Board of Education, Eolia, received low bid of \$204,555 from Brockmeyer Construction Co., St. Louis, for high school.

ST. LOUIS. Monsanto Chemical Co. let contract to Frun-Colton Contracting Co., for refrigerating building, \$65,000.

ST. LOUIS. Municipal Airport Commission making working drawings for administration building, St. Louis Terminal Airport, \$3,300,000.

ST. LOUIS. Stix, Baer & Fuller, plan shopping center project, Richmond Heights, \$8,383,700.

ST. LOUIS. Hanrose Investment Company plans 25-story, \$5,500,000 medical office building.

NORTH CAROLINA

Erwin Mills, Inc. plans \$2,650,000 modernization program in Durham, Dunn and Coolemeec.

North Carolina, Alabama, Mississippi, Georgia. — Sinclair Refining Co. plan new pipeline terminals, cost, \$2,000,000; Greensboro, N. C. holding 90,000 barrels; Charlotte N. C. 95,000 barrels; Birmingham, Ala., 150,000 barrels; Meridian, Miss., 95,000 barrels of storage space; Atlanta, Ga., 95,000 barrels of storage space.

Proposed military construction program in North Carolina includes: Fort Bragg, Fayetteville, \$15,325,000; Naval Auxiliary Land-

ing Field, Edenton, \$195,000. Naval Air Facility, Weeksville, \$237,000; Raleigh-Durham Municipal Airport, Raleigh-Durham, \$18,956,000; Seymour-Johnston Field, Goldsboro, \$7,726,000.

ASHVILLE. Asheville School Board received low bid of \$252,489 from Quality Construction Co., for Aycock School building and \$172,533 from Merchant Construction Co., Asheville, for Livingston School.

CAMP LEJEUNE. Navy Department, Charleston, S. C., let contract at \$1,658,750 to T. A. Loving, Goldsboro, for operations hangar.

CAMP LEJEUNE. Navy Department let contract at \$179,732 to Harrison-Wright Co., Inc., Charlotte, for installation 12,000 KVA transformer and voltage regulators.

CAMP LEJEUNE. Navy Department let contract to R. N. Rouse & Co., Goldsboro, at \$198,838 for Camp Knox Trailer Park, Marine Barracks.

CAMP LEJEUNE. Navy Department let contract at \$440,550 to Automatic Electric Sales Corp., Chicago, Ill., for inside telephone facilities.

CHARLOTTE. Sinclair Refining Co. plans terminal adjoining Plantation Pipe Line's Charlotte Terminal, \$450,000.

FORT BRAGG. Corps of Engineers, Wilmington, let contract at \$872,659 to J. A. Jones Construction Co., Charlotte, for BOQ's building.

FORT BRAGG. Corps of Engineers, Wilmington, let contract to Ballenger Paving Co., Greenville, S. C., at \$583,889 for Part 1, Alt. and Part 2, Alt., Secs. 1, 2, 3, for improvements to motor pools, General Areas.

FORT BRAGG. Corps of Engineers, Wilmington, let contract to O. W. Godwin, Inc., Dunn, at \$1,121,553 for improvements to company type mess halls and operating suites.

FORT BRAGG. Corps of Engineers, Wilmington, let contract to Norman A. Smyth Co., Charlotte, at \$177,675 for meat cutting plant.

GOLDSBORO. State Hospital for Negroes seeking an appropriation of \$3,342,000 for permanent improvements.

GREENVILLE. East Carolina College seeking \$3,023,338 for its operating and permanent improvements.

HILLSBORO. Board of Commissioners of Orange County let contract to Coltrane-Graham Construction Co., High Point, at \$247,650 for Court House.

HYDE COUNTY. Hyde County Board of Education, Swansboro, let contract at \$184,124 to C. C. Haynes Construction Co., Durham, for schools.

KINSTON. Caswell Training School seeking an appropriation of \$1,364,000 for permanent improvements.

KINSTON. Board of Trustees of Kinston Graded School District, let contract at \$272,807 to O. L. Sackelford, for additions to Adkin High School and J. H. Sampson Elementary School.

LEAKSVILLE. City received low bids for water and sewer extensions as follows: water lines, section I, at \$109,886 from Howard Construction Co., Greensboro; section II, at \$199,600 from N. E. Brewer Co., Winston-Salem; section III, tank foundation, \$19,934 from Crain & Denbo, Inc., Durham and Section IV, pumping station, at \$25,152 from N. E. Brewer Co., Winston-Salem.

MEBANE. Town approved \$225,000 bond issue for expanding water and sewer facilities.

RALEIGH. Corps of Engineers, Wilmington, let contract to Port Construction Co., Wilmington, at \$219,599 for 40-man GRC armory.

SHELBY. First Baptist Church Congregation received low bid of \$219,823 from Hickory Construction Co., Hickory, N. C. for new educational building and alterations to present building.

WEEKSVILLE. Navy Department, Norfolk, let contract at \$892,694 to Brown-Coble Construction Co., Lexington, for airfield paving, Naval Air Facilities.

WILMINGTON. Temple Baptist Church Congregation let contract to W. A. Simon, Inc., Wilmington, N. C., at \$268,300 for building.

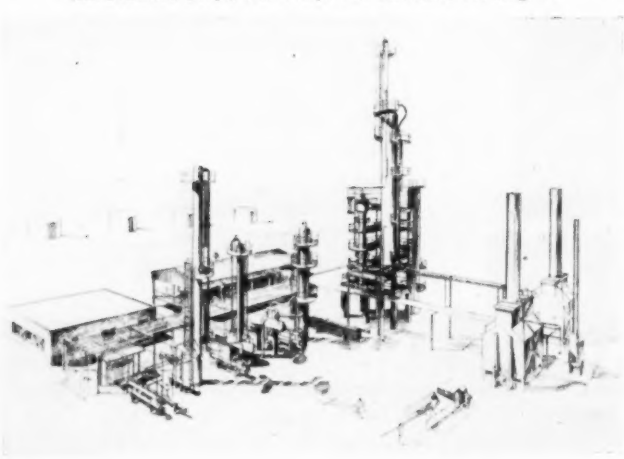
OKLAHOMA

Proposed military construction in Oklahoma includes: Fort Sill, Lawton, \$4,374,000; Clinton Naval Air Station, Clinton, \$13,556,000; Ardmore Municipal Airport, Ardmore, \$4,237,000; Vance Air Force Base, Enid, \$7,621,000; Tinker Air Force Base, Oklahoma City, \$2,642,000.

ALTUS. Corps of Engineers, Tulsa, let contract to J. J. Fritch, Dallas, Tex., at \$1,633,996, Alt. bid, for dormitories, mess and administration buildings, Altus Base.

ALTUS. Corps of Engineers, Tulsa, let contract to E. B. Bush Construction Co., Oklahoma City, at \$152,935 for motor pool area and vehicle shops, Altus Base.

Below—Construction is being finished in Louisiana on the world's first fluid hydroformer, according to M. W. Kellogg Co., refinery and chemical plant engineers and contractors of New York. To appear as above, the plant will be a 2,000-barrel a day unit. It is being built at Destrehan, La. for the Pan-Am Southern Corp., with completion scheduled for August.



ALTUS — Corps of Engineers, Tulsa, let contract to P. G. Troop, McAlester, at \$149,649 for BOQ buildings, Altus Base.

ARDMORE — Corps of Engineers, Tulsa, received low bid from E. B. Busn, Oklahoma City, at \$2,294,036 for airman's dormitories, mess and administration buildings, Ardmore Base.

ARDMORE — Corps of Engineers, Tulsa, let contract to Harris-Cross Construction Co., Tyler, at \$286,789 for BOQ buildings, Ardmore Base.

CLINTON — Congress approved \$9,852,000 for military construction, Clinton Naval Air Station.

FORT SILL — Corps of Engineers, Tulsa, let contract to R. P. Farnsworth & Co., Baton Rouge, La., at \$6,357,478 for 21 three-story barracks.

FORT SILL — Corps of Engineers, Tulsa, received low bid from T. C. Bateson Construction Co., Inc., Dallas, Tex., at \$2,601,431 for academic building.

MCALISTER — Navy Department, New Orleans, La., received low bid from Myron Groselocse, Bethany, at \$792,000 for road repairs and improvements, Naval Depot.

PHYROR — Stockholders of Deere & Co., Moline, Ill., plan new plant for production and sale of agricultural fertilizer chemicals, cost between \$18,000,000 and \$21,000,000, including construction, equipment and initial working capital.

TULSA — Southminster United Presbyterian Church congregation plans educational building, \$100,000.

TULSA — Sixth Church of Christ, Scientist, plans new building, \$140,000.

SOUTH CAROLINA

Proposed military construction in South Carolina includes: Fort Jackson, Columbia, \$182,000; Marine Corps Auxiliary Landing Field, Beaufort, \$3,792,000; Naval Ammunition Depot, Charleston, \$535,000; Naval Shipyard, Charleston, \$7,329,000; Myrtle Beach Airport, Myrtle Beach, \$9,243,000.

Central Electric Cooperative, Columbia, received low bids for substations and breaker stations—Pineswood—Service Electric Co., Chattanooga, Tenn., \$705,025; Batesburg—Roy Richards Constr. Co., Carrollton, Ga., \$343,535; Camden—Sumter Builders, Inc., Sumter, S. C., \$143,658; Darlington—Sumter Builders, Inc., \$146,724.

BARNWELL — Board of Trustees, Barnwell School District 45 let contract at \$353,860 to General Construction Co., Charleston, for elementary school.

BARNWELL — Board of School Trustees received low bid of \$375,130 from General Construction Co., Charleston, for colored elementary school and high school.

BATH — Board of Trustees, Aiken, let contract at \$234,000 to George L. Fuller Co., Augusta, for Jefferson Elementary School.

CHARLESTON — City plans \$700,000 waterworks addition.

CHARLESTON — Corps of Engineers let contract to Skinner & Ruddock, Inc., Charleston, at \$741,000 for airman's dormitories, mess and administration building.

CHARLESTON — Corps of Engineers received low bid from General Construction Co., Columbia, at \$384,000, Item 1 and at \$247,000, Item 2, for base warehouse.

CHARLESTON — Corps of Engineers let contract to Conn Structures, Atlanta, Ga., at \$107,500 for construction of A. I. O. shops and warehouse.

CHARLESTON — Corps of Engineers let contract at \$168,920 to Conn Structures, Atlanta, Ga., for 8 squadron operations building, at \$708,000 for group headquarters, at \$139,397 for rehabilitation.

CHARLESTON — Corps of Engineers let contract at \$135,951 to Skinner & Ruddock, Inc., for wine headquarters.

CHARLESTON — Corps of Engineers received low bid from J. C. Bledsoe, Columbia, at \$176,351 for water and sewer system.

CHARLESTON — Corps of Engineers let contract to Gaston Electric Co., Gastonia, N. C., at \$183,530 for electrical distribution system.

CHARLESTON — Corps of Engineers received low bid from Henry G. Dupree, Jacksonville, Fla., at \$870,718 for central heating plant and steam distribution system.

CHARLESTON — Corps of Engineers received low bid from Empire Gas Engineering Co., Atlanta, Ga., at \$132,587 for bulk fuel storage system.

CHARLESTON COUNTY — Board of Trustees, James Island School District No. 3, let contract at \$157,999 to H. A. DeCosta Co., for Meggett School.

DARLINGTON COUNTY — Darlington County School District, Darlington, received low bid of \$224,520 from Interstate Construction Co., Charlotte, for Mayo School.

FORT JACKSON — Post Quartermaster let contract to Eastern Contractors, Inc., Columbia, at \$453,938, for rehabilitation of company kitchens.



Above—First vessel berths at the new \$3,000,000 grain elevator recently finished at Mobile, Ala. Jack Construction Co., of Kansas City, Mo., were the contractors. Harry E. Surface Co., also Kansas City, were subcontractors for the machinery.

FORT JACKSON — Corps of Engineers, Charleston, S. C., let contract at \$137,372 to Mitchum Construction Co., Columbia for Q. M. consolidated shop building and warehouse.

GREENVILLE — Jeff Hunt Machinery Co., Columbia, received low bid from Harper Builders' Supply Co., Williamston, at \$169,975 for sales office and service plant.

GREENVILLE — Corps of Engineers, Charleston, let contract to Potter-Shackelford Construction Co., Greenville, at \$223,195 for ORC Armory.

HARTSVILLE — West Hartsville Baptist Church congregation let contract to T. B. Haynsworth, Jr., Florence, at \$129,000 for Sunday School building and chapel.

LAKEVIEW — Board of School Trustees let contract at \$151,995 to V. Lyn Brabham, Florence, for Columbus High School.

LAMAR — Board of Trustees of Darlington County School District, Darlington, let contract at \$161,085 to Boyle Construction Co., Sumter, for Lamar High School.

LAMAR — Board of Trustees, Darlington County School District, Darlington, received low bid of \$183,000 from C. B. Askins, Lake City, for Spaulding High School.

LANCASTER — Lancaster County School Board will receive bids sometime in September for new \$100,000 school for negroes.

N. CHARLESTON — Charleston County School District 1 let contract at \$444,522 to Skinner & Ruddock, Inc., Charleston, for Bonds-Wilson Negro High School.

PARRIS ISLAND — Navy Department let contract to Young Lumber Co., Beaufort, at \$196,490, for replacement of fire escapes.

PARRIS ISLAND — Navy Department let contract to McCoy-Helgeson Co., 320 S. Hudson St., Greenville, at \$216,974 for curbs, gutters, sidewalks and pavement.

PINOPOLIS — Public Service Authority, Moncks Corner, let contract to Daniel Construction Co., Greenville, S. C., at \$1,900,000, for power plant building.

PORT ROYAL — South Carolina State Ports Authority plans first unit of shipping terminal at Port Royal, \$225,000.

SWALEE — Corps of Engineers, Charleston, let contract at \$384,646 to Southern Construction Co., Augusta, Ga., for two additional airman's dormitories, Shaw Base.

WALLACE — Board of Trustees, Marlboro County Public Schools, Bennettsville, let contract at \$122,100 to Harlike-Quattlebaum Construction Co., Florence, for elementary school.

WILLISTON — Williston-Elko School District has plans in progress for permanent white elementary school, \$300,000.

TENNESSEE

Proposed military construction in Tennessee includes: McGhee-Tyson Airport, Knoxville, \$1,355,000; Arnold Engineering Development Center, Tullahoma, \$12,000,000.

CHATTANOOGA — Collins & Hobbs, Chattanooga, have contract at \$275,630 for ORC Armory.

CHATTANOOGA — Verhey Construction Co. has general contract at \$152,957 for McCallie School.

CHATTANOOGA — L. A. Warlick Contracting Co. has contract at \$510,400 for Chronic Disease Building addition, Erlanger Hospital.

KNOXVILLE — Corps of Engineers, Nashville, let contract to Helrich Construction Corp., Knoxville, at \$808,349 for hangar, warehouse and other buildings, McGhee-Tyson Airport.

KNOXVILLE — University of Tennessee let contract at \$1,306,800 to Foster & Creighton, Nashville, for students' activities building.

KNOXVILLE — Johnson & Willard has general contract at \$1,205,000 for state office building and supreme court building.

KNOXVILLE — Baumann & Baumann, Knoxville, Archts., will soon release plans for bids for Tennessee Memorial Research Center & Hospital near Knoxville, \$6,000,000.

LEWISBURG — City received low bid of \$358,965 from Sullivan, Long & Hagerty, Birmingham, Ala., for sewage treatment plant.

MURFREESBORO — City received low bid of \$546,195 from Sullivan, Long & Hagerty, Birmingham, Ala., for water improvements.

NASHVILLE — Sinclair Refining Company plans bulk distributing plant, \$350,000.

OAK RIDGE — U. S. Atomic Energy Commission let contract to R. J. Daum Construction Co., Englewood, Calif., at \$193,141, for development of facilities for test compound.

OAK RIDGE — U. S. Atomic Energy Commission, Washington, D. C., announced award of contract to Maxon Construction Co., Dayton, Ohio, for \$464,000,000 addition of gaseous diffusion plant.

SMILEY — Lauderdale County Hospital Authority has plans near completion for 43-bed addition to Lauderdale County Hospital, cost \$150,000.

SEVANESE — University of the South received low bid of \$225,358 from Busch Building Co., Nashville, for sanitary sewer extension.

SWYRNA — Corps of Engineers, Nashville, let contract to James A. Baker, Nashville, at \$352,720 for Warehouse No. 1 and 2, and to Steenberg Construction Co., St. Paul, Minn., at \$405,580, for Warehouse No. 3.

(Continued on page 30)

Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

TENNESSEE

(Continued from page 29)

stairs, service dock, auto maintenance shop, Sewart Air Base.

TYNER—Corps of Engineers, Nashville, let contract to Hiwassee Constructors for rehabilitation of Volunteer Ordnance Works, estimated to cost more than \$21,000,000.

TEXAS

Proposed military construction program in Texas includes: Biggs Air Force Base, El Paso, \$773,000; Carswell Air Force Base, Fort Worth, \$15,844,000; Tye Field, Abilene, \$12,273,000; Majors Field, Greenville, \$23,000; Galveston Municipal Airport, Galveston, \$6,269,000; Big Spring Air Force Base, Big Spring, \$6,270,000; Bryan Air Force Base, Bryan, \$3,791,000; Ellington Air Force Base, Houston, \$4,787,000; Foster Field, Victoria, \$5,129,000; Goodfellow Air Force Base, San Angelo, \$3,741,000; Harlingen-All-Valley Municipal Airport, Harlingen, \$11,488,000; James Connally Air Force Base, Waco, \$7,929,000; Laredo Municipal Airport, Laredo, \$4,943,000; Laughlin Air Force Base, Del Rio, \$4,958,000; Moore Field, Mission, \$10,850,000; Patrin Air Force Base, Sherman, \$4,016,000; Randolph Air Force Base, San Antonio, \$5,686,000; Reese Air Force Base, Lubbock, \$8,000,000; Kelly Air Force Base, San Antonio, \$8,239,000; Brooks Air Force Base, San Antonio, \$8,000,000; Fort Bliss, El Paso, \$5,036,000; Fort Hood, Killeen, \$10,516,000.

ABILENE—Corps of Engineers, Fort Worth, plans Air Force Base Senate and House passed a \$23,172,000 appropriation.

AMARILLO—Woolfin Park, Inc., plans multi-million-dollar shopping center.

AUSTIN—City has plans near completion and expects to call for bids late in August or early September for 25,000,000-gallon water plant, \$2,000,000.

AUSTIN—Corps of Engineers, Galveston, let contract at \$697,989 to H. B. Zachry Co., San Antonio, for runway and taxiway extensions at Bergstrom Air Base.

BROWNSVILLE—Corps of Engineers, let contract to Heidenfels Bros. Corp., Corpus Christi, at \$2,255,913, for Fort Isabel-Padre Island Causeway.

CORPUS CHRISTI—Crippled Children's Hospital has plans in progress, expects to call for bids about November of 1952 for hospital, \$1,000,000.

CORPUS CHRISTI—Suntide Refining Co. plans \$15,000,000 refinery.

DALLAS—Statler Hotels, Inc., plans hotel, \$9,935,000.

DALLAS—West Coast Pipe Line Co., plans 24-inch crude oil pipeline stretching 953 miles between Wink, Tex., and Norwalk, Calif., \$101,000,000.

DALLAS—West Dallas Housing Authority received low bid of \$892,132 from E. H. Reeder for underground utilities.

DEER PARK—Deer Park Independent School District plans elementary school and gymnasium, \$1,000,000.

DUMAS—Shamrock Oil & Gas Company, let contract to Gasoline Plant Construction Co., Houston, at \$2,300,000, for alkylation plant.

EL PASO—Corps of Engineers, Albuquerque, N. M., let contract to C. H. Leavelle & Co., El Paso, at \$691,494, for missile laboratory and classroom building, Fort Bliss.

FORT HOOD—Corps of Engineers, Fort Worth, let contract to T. C. Bateson Construction Co., Dallas, at \$2,012,848, for six 225-man barracks.

FORT WORTH—A. C. and J. T. Luther and Earl Wilson plan three-unit Luther program for Ridgely, \$1,000,000.

HARLINGEN—Baptist General Convention of Texas selected Cooke, Bowman & York, Harlingen, as Architects for new hospital and modernization of present building, \$1,250,000.

HEARNE—Corps of Engineers, Galveston, let contract to Brown & Root, Inc., Houston, at \$801,252, Alt. Bid, for Auxiliary Field, Bryan Air Base.

HOUSTON—City received low bid of \$841,870 from Brown & Root, Inc., for Lake Houston Pumping Station on San Jacinto River.

HOUSTON—Meadowbrook Lumber Co. plans \$5,000,000 subdivision in Pasadena.

KENEDY—Kenedy Independent School District plans school program, \$675,000.

LONGVIEW—Texas Eastman Co. plans plant for manufacture of polyethylene plastic materials, \$7,000,000.

LUBBOCK—City plans water and sanitary sewer system extensions and improvements, \$2,000,000.

MIDLAND—City plans voting upon \$1,730,000 bond issue for water supply and extensions to sewer system.

MINERAL WELLS—Corps of Engineers, Fort Worth, let contract to Powell, Samanie & Caruth, 915A North 15th St., Temple, at \$1,118,630, for miscellaneous shop type buildings, Walters Base.

ODessa—Phillips Petroleum Co. plans office building, \$1,000,000.

PORT ARTHUR—South County Hospital Foundation has preliminary plans in progress for hospital, \$2,800,000.

PORT NECHES—United States Rubber Co. has underway conversion of GR-S synthetic rubber plant from "hot" to "cold" conversion and expansion program.

ROCKDALE—Aluminum Company of America, Pittsburgh, Pa., let contract to William A. Smith Construction Co., Houston, for preparing railroad trackage on site of the aluminum smelting plant being built at Sandow, \$10,000,000.

SHERMAN—City approved \$933,441 bond issue for municipal improvements.

TARRANT COUNTY—District Engineer, Fort Worth, let contract to Spencer Const. Co., Carrollton, Tex., at \$670,839, for drainage structures and excavation of channel, Part III, Fort Worth Floodway, Trinity River and Tributaries.

TEMPLE—Scott & White Memorial Hospital has preliminary plans in progress for hospital buildings, \$15,000,000 to \$20,000,000.

VICTORIA—Corps of Engineers, Galveston, let contract to C. L. Browning, Jr., Beach Hill Station, San Antonio, at \$1,351,181 for construction of new buildings, Group C, Foster Base.

VICTORIA—Corps of Engineers, Galveston, received apparent low bid from C. L. Browning, Jr., San Antonio, at \$1,351,181, for photographic laboratory, parachute shop, control tower, synthetic training building, three hangars, etc.

WACO—Corps of Engineers, Fort Worth, let contract to Shelby Construction Co., New Orleans, La., at \$788,682, for BOQ's, James Connally Air Base.

VIRGINIA

Proposed military construction program in Virginia includes: Fort Belvoir, Alexandria, \$3,577,000; Fort Eustis, Newport News, \$3,233,000; Camp Pickett, Blackstone, \$142,000; Vint Hill Farms, Warrenton, \$341,000; Naval Amphibious Base, Little Creek, \$3,279,000; Naval Base, Norfolk, \$5,417,000; Naval Decussing Station, Norfolk, \$2,000,000; Naval Hospital, Norfolk, \$12,664,000; Naval Supply Center, Norfolk, \$1,664,000; Annex, \$652,000; Marine Corps Schools, Quantico, \$163,000; Naval Ammunition Depot, St. Juliens Creek, \$326,000; Naval Mine Depot, Yorktown, \$600,000.

Chesapeake & Potomac Telephone Co. of Virginia plans expenditures of \$6,607,000 for expansion.

ARLINGTON—Arlington County let contract at \$397,849 to Elix Construction Co., McLean, for R. E. Lee storm and sanitary sewer project.

ARLINGTON—Schriber Contracting Co., Washington, D. C., has general contract at \$560,000 for Page School.

DAHLGREN—Navy Department, Washington, D. C., received low bid of \$1,668,700 on Item 1, \$1,648,000 on Item 2, \$1,635,000 on Item 3, and \$1,407,900 on Item 4 from Curtis Builders, Washington, D. C., for test rocket launcher and battery bomb-proof building, Proving Ground.

DAHLGREN—Navy Department, Washington, received low bid of \$669,760 on Item 1, \$664,360 on Item 2, \$627,660 on Item 3, and \$610,960 on Item 4 from Tuller Construction Co., Red Bank, N. J., for quick recovery facilities, Gun Factory.

DAHLGREN—Navy Department, Washington, D. C., received low bid from F. H. Martell Co., Washington, D. C., at \$366,200 on Item 1 for case storage building, Rocket Armament Battery, Bombproof Facility.

ELIZABETH CITY COUNTY—Corps of Engineers received low bid of \$3,109,000 for new housing, Shellbank Area, Langley Base.

FAIRFAX—Fairfax County let contract at \$88,960 to Fay & Clifton, Fairfax, for subtrunk and collecting sewers, Contract 12.

FORT BELVOIR—Corps of Engineers let contract to Ginnell Construction Co., Washington, D. C., at \$304,724, for standardization of company mess halls.

FORT EUSTIS—Corps of Engineers, Norfolk, let contract at \$987,362 to McLean Construction Co., Baltimore, Md., for extending pier.

FORT EUSTIS—Corps of Engineers, Norfolk, received low bid from Virginia Engineering Co., Newport News, at \$976,470, for ordnance repair facilities and rail warehouse.

FORT EUSTIS—Corps of Engineers, Norfolk, received low bid from J. A. Jones Construction Co., Charlotte, N. C., at \$362,520, for post engineer facilities.

FORT LEE—Corps of Engineers, Norfolk, received low bid from McKoy-Helgeson Co., Greenville, S. C., at \$667,558, Sch. I, for training facilities.

FORT MONROE—Corps of Engineers, Norfolk, received low bid of \$1,988,889 from Rush Constr. Co., Norfolk, for apartments.

FORT STORY—Corps of Engineers, Norfolk, received low bid of \$843,648 from Tidewater Construction Co., Norfolk, for training facilities, mtr. repairs shops, office building, parking and storage area.

LANGLEY FIELD—Corps of Engineers, Norfolk, received low bid from C. W. Lockwood & Sons, Hampton, at \$334,970, for readiness hangar, Langley Air Base.

MONTGOMERY COUNTY—Board of Education let contract at \$174,000 to J. M. Turner & Co., Roanoke, for Ironto Elementary School and Christiansburg Elementary School, Christiansburg Negro Elementary School.

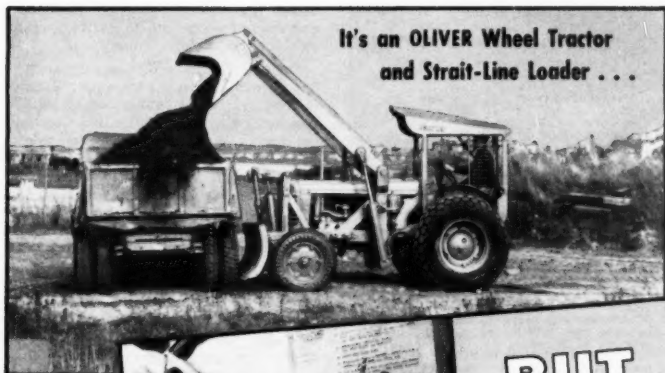
NORFOLK—Navy Department let contract to Strickland Brothers, Portsmouth, at \$307,125, for rehabilitation of electrical service.

Below—Multi-million dollar plant to be constructed at Raleigh, N. C. for manufacture of electric meters by Westinghouse Electric Corp. To contain 500,000 square feet of space, the plant is part of the company's \$296,000,000 expansion program. The plant will be located on a 100-acre site in Wake County, just north of the North Carolina capital. The building will be steel and concrete faced with brick. Manufacturing areas will be one-story; offices, two stories. High level fluorescent light, an air conditioned cafeteria and a professionally staffed medical department will be features. Robert & Company Associates of Atlanta are the architects and engineers.



"Quick Change Artist"

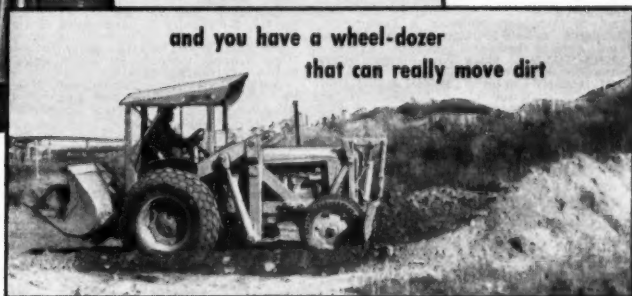
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and you have a wheel-dozer
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Southern Construction Projects

(Typical and Important Projects Excerpted from Daily Construction Bulletin)

VIRGINIA

(Continued from page 39)

flood and security lighting, Norfolk Naval Shipyard.

NORFOLK—Navy Department let contract to J. R. Houska Co., Norfolk, at \$418,643 for rehabilitation of buildings, U. S. Naval Base.

NORFOLK—Public Housing Authority let contract to Staples Construction Co., New York, at \$866,767, for defense housing project.

OCEANA—Navy Department Norfolk, received low bid from Virginia Engineering Co., Newport News, at \$2,100,000 on Item 1 and at \$2,013,000 on Item 2, for aircraft maintenance hangar, Naval Station.

PITTSBURGH COUNTY—Board of Education let contract at combination bid of \$344,640 to English Construction Co., Altavista, for additions to Hurt Elementary School; additions to Northside Negro High School and Gretna Negro Elementary School.

PORTSMOUTH—Navy Department, Norfolk, let contract to A. L. Wright Co., Portsmouth, at \$275,653, for steam distribution and oil storage, Marine Corps Forwarding Depot.

PRINCE GEORGE COUNTY—Board of Education let contract at \$701,625 to English Construction Co., Altavista, for Fort Lee Consolidated School.

QUANTICO—Navy Department, Washington, D. C., received low bid of \$438,000 on Item 1, \$419,000 on Item 2, \$403,000 on Item 3 and \$391,000 on Item 4 from W. C. Spratt Co., Fredericksburg, for rehabilitation water system.

QUANTICO—Navy Department, Washington, D. C., received apparent low bid from Victor R. Beauchamp, Washington, D. C., at \$715,553, Item 1, for small arms range.

RICHMOND—Corps of Engineers let contract to Conquest, Monrovia & Dunn, Inc., Richmond, at \$310,604, for ORC Army and motor vehicle shed.

RICHMOND—Mary Washington College plans \$250,000 dormitory.

RICHMOND—John W. Daniel & Co., Danville, submitted low bid of \$331,958 for factory, T. A. Talley & Son, Richmond, low at \$164,264 on mechanical work, Morris Hunter,

Inc., Richmond, at \$50,819 on electrical work.

RICHMOND—Board of Education let contract at \$291,294 to Howard-Mitchell Construction Co., for alterations and additions to Buchanan School.

RICHMOND—Manchester Board & Paper Co., announced plans for \$3,000,000 paper board plant.

SALEM—John Puhl Products Co. let contract to J. M. Turner & Co., Roanoke, at \$280,730 for building.

SMITHFIELD—P. D. Gwaltney, Jr. & Co. received low bid from Wise Contracting Co., Richmond, at \$379,800, for packing plant.

SOUTH HILL—English Construction Co., Altavista, has general contract at \$678,760 for Community Memorial Hospital.

WILLIAMSBURG—College of William & Mary let contract at \$863,138 to Thornton Construction Co., Richmond, for men's dormitories.

WEST VIRGINIA

HUNTINGTON—Strietmann Biscuit Co., Cincinnati, Ohio, plans combination warehouse and salesroom, \$125,000.

MOONSVILLE—National Aniline Division of Allied Chemical and Dye Corp. plans chemical plant to manufacture nitrobenzene and aniline by a new continuous process, \$2,300,000.

SOUTH CHARLESTON—Navy Department, Norfolk, Va., let contract to Howard Price & Co., Huntington, at \$90,750 for repairs to crane rails, railroad crossing and railroads, Ordnance Plant.

SOUTH CHARLESTON—Navy Department, Norfolk, Va., let contract to Harry Daugherty & Son, Inc., Huntington, at \$94,385, for replacement of water lines, Ordnance Plant.

SOUTH CHARLESTON—Navy Department, Norfolk, Va., let contract to Schoolfield-Harvey Electric Co., Charleston, at \$45,314, for repairs to yard crane, Ordnance Plant.

SOUTH CHARLESTON—State to receive from Federal Government seven acres for health laboratories, \$200,000.

WHEELING—Navy Department, Norfolk, Va., received low bid from Luchetti Construction Co., at \$61,825, for Marine Corps Facility, Training Center.

A.S.C.E. Concludes Meeting

Over 1,000 strong, civil engineers from all parts of America—including some of the top brains of the profession—concluded a successful, entertaining, and informative summer convention in Denver June 20. The week-long American Society of Civil Engineers parley began June 16 and ran through five days of technical discussions, field trips and entertainment functions.

A high spot of the big conclave came when National President Carlton S. Proctor called for greater participation by American engineers in the planning of the country's future courses and policies. Speaking before assembled engineers, Mr. Proctor pointed out the increasing importance of engineering accomplishments in the nation's struggle to avoid a third World War.

Commenting on the responsibility of engineers toward guiding the nation's destinies, Mr. Proctor declared, "No longer may we remain indifferent to the social impacts, the economic implementations and the cultural repercussions of our work and inventions."

"No longer can we bury our heads in the sands of our chosen branch of engineering technology and escape the accusing eye of those who look to us for guidance and accurate road directions."

"No longer may we hide behind our

slide rule and expect to be able to maintain the stewardship of our God-given privilege to utilize and direct the forces of nature for the benefit of mankind.

"And no longer may we shirk our responsibilities for direction of the educational training of the young men coming into our profession..."

Mr. Proctor, in an interview, also declared that A.S.C.E. is wholeheartedly in favor of supporting construction of self-supporting toll superhighways, such as the Denver-Boulder turnpike and the New Jersey turnpike. This type of road, he declared, do not impose a further strain on already overburdened taxpayers. Mr. Proctor also pointed out that surveys show motorists would gladly pay toll for the privilege of driving on well-built super roads.

Many provocative technical sessions were held during the convention. They covered such diverse subjects as highway, dam and pumping plant construction, manifold aspects of irrigation and drainage including multiple purpose water projects and trans-basin exportation of water, fluid dynamics, soil mechanics and foundations, waterways, sanitary engineering and city planning.

Some of the outstanding papers given included one by Roderick L. Downing, professor of civil engineering at the University of Colorado, on the Boulder-Den-

ver turnpike. Professor Downing was literally the "father" of the big project.

Another provocative paper was that of Col. L. J. Lincoln, district engineer for the Corps of Engineers at Kansas City. He pointed out that during the devastating Kansas floods last year, prompt action by health authorities completely averted a deadly typhoid epidemic. He added that modern sanitary know-how and prompt action can, in future, prevent epidemics in disaster areas.

Savings in time and money by surveying from helicopters in Alaska were described by Gerald Fitzgerald, Chief Topographic Engineer of the U. S. Geological Survey, Washington, D. C. So successful has this been, he declares, that other public agencies are adopting this aerial survey method. At another technical session, Henry A. Barnes, Denver Traffic Engineer, declared that present Denver public transportation concepts—and, by implication, those elsewhere—will have to be drastically altered within a few years. He pointed out that money spent on improved, ultra-modern public transportation can enable transit to do the job of transporting city dwellers more effectively than street and highway projects costing many times more.

Dozens of other outstanding papers, too numerous to enumerate, were given in the course of the conclave.

Members of the Society—currently celebrating ASCE's 100th birthday—also helped the U. S. Bureau of Reclamation observe the latter's fiftieth anniversary on June 17th. A featured speaker was Kenneth Markwell of Washington, D. C., Assistant Commissioner of the Bureau. Mr. Markwell discussed progress made in the 50 years of the bureau's history.

June 20 and 21, visiting engineers participated in a series of field trips which took them to outstanding engineering feats of recent date in Colorado. In addition to breathtaking scenery, the technical men inspected the Denver-Boulder turnpike, the new Clear Creek Canyon highway, and the dams, power plants, pumping plants and water transmission system of the Colorado-Big Thompson project.

Families of visiting engineers were not neglected during the Denver convention. For the ladies there were cocktail parties, receptions and a trip to world-famous Central City. Baby-sitters were provided for youngsters and suitable companions, plus interesting activities, for older children. Further adding a light touch were smokers and other events for engineers themselves, and a big chuck wagon dinner at the magnificent Park of the Red Rocks in the foothills west of Denver.

Following the close of the convention, a large number of engineers and their families stayed over for a Colorado vacation; anxious for holiday relaxation, the technical men scattered to various hotels, resorts, dude ranches—and, last but not least, to many a good trout stream before starting for home.

Alfred J. Ryan, Denver consulting engineer, served as general chairman of the Colorado Section Convention Committee.

Public Health Service Reports on Sewers

Municipalities awarded contracts for the construction of 111 sewage treatment plant projects during the first quarter of 1952, reports the Public Health Service of the Federal Security Agency. These 111 projects in 33 states involve a total cost of about \$27,000,000.

"These municipalities are not only helping to clean up water pollution in their areas but are also conserving water resources and are adding to the Nation's public health defenses," declared Dr. Leonard A. Scheele, Surgeon General of the Public Health Service.

Over 2,000,000 people will receive new or improved service when these projects are completed.

The Surgeon General pointed out that the projects are the result of the work of State and interstate water pollution control authorities. "These agencies have been leading the Nation-wide attack on the problems of pollution which constitute a major threat to our vital water resources in many parts of the country," Dr. Scheele said.

The Public Health Service cooperates in this work by developing comprehensive plans to abate pollution and by providing research and technical assistance. The Water Pollution Control Act of 1948 authorized these services as well as financial aid in the form of grants to the States for investigations of water pollution caused by industrial wastes.

Of the 111 projects reported, 72 are new plants being built at a total cost of about \$17,000,000. The other 39 consist of additions, enlargements or replacement of existing plants.

Dr. Scheele said, however, that the current rate of investment in sewage treatment works construction is far short of the rate required to solve the pollution problem in this country.

"Comparison with construction figures



Above—Franklin Avenue underpass, New Orleans, immediately after its recent dedication. The structure has two 57-foot structural steel girder superstructure spans which carry three tracks of the Louisville and Nashville Railroad across the above two roadways of Franklin Avenue. The railroad bridge structure is supported by one reinforced concrete center pier and two reinforced concrete abutments, which is founded on concrete-filled tubular steel piles ranging from 73 to 90 feet in length. General contractor for the project was Keller Construction Co. David Godat and Associates were the consulting engineers.

for the same months of previous years," he said, "reveals that the present rate is less than the average for the years 1948-1952. It meets only about one-fourth of the need for catching up with the backlog and for meeting new needs arising from the growth of our cities and industries."

"In addition," he said, "existing plants must be replaced as they become obsolete. This will become increasingly important as more and more plants built 20 or 25 years ago reach a point where their effectiveness is sharply limited."

Southern communities participating in

the program were, listed by state, city name, population, type of project and cost:

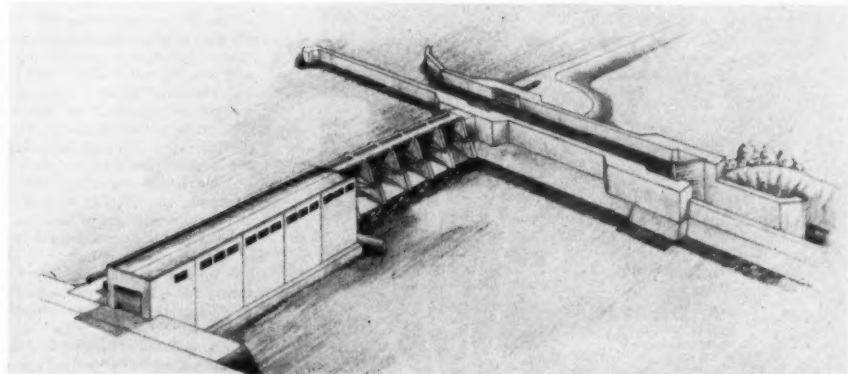
Alabama—Enterprise, 7,288, new plant, \$119,000; Jonesboro, 16,310, new plant, \$196,328;

Arkansas—Fordyce, 3,754, new plant, \$235,000; Hazen, 1,270, new plant, \$87,000;

Florida—MacDill Air Force Base, Tampa, new plant, \$413,200; Maderia Beach, 916, new plant, \$641,000;

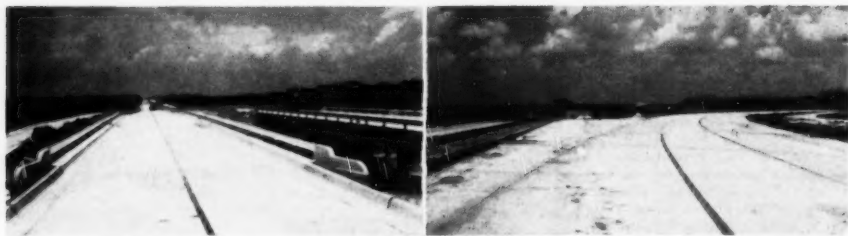
Georgia—Hinesville, 1,217, new plant; Louisiana—Napoleonville, 1,260, new plant, \$182,864;

(Continued on page 37)



Above—Contract for the Old Hickory lock and dam on the Cumberland River, in Tennessee, has been awarded to J. A. Jones and Charles H. Tompkins Construction Companies, as a co-venture. At the present time the contract is about five per cent complete, with excavation completed for the core trench and the lock chamber. Construction of the cofferdam is under way. The project is being done under supervision of the Nashville office of the Corps of Engineers.

Texas Opens Houston-Galveston Freeway



Above—Scenes on the \$28,643,000 50-mile Gulf Freeway just opened between Galveston and Houston. At left is overpass near League City, looking northwest with Clear Creek bridge and Harris County in the distance. Right—Intersection with the LaPort Expressway, looking southwest from the latter route.

Texas motorists now travel the "free" way over fifty miles of high speed expressway built between Houston, the state's largest city, and Galveston, its main seaport, at a cost of \$28,000,000.

Ceremonies held early this month marked the completion of the project, which reduced driving time between Houston and the Gulf Coast city to about fifty-six minutes, or about one-half of the elapse required before the route was constructed.

Motorcades from both cities led by Gov. Allan Shivers and Chairman E. H. Thornton, Jr. of the Texas Highway Commission proceeded to the Dickinson Bayou overpass located about mid-way the fifty-mile route, where the official opening ceremonies were held.

Following the official opening, where Chairman Thornton made the dedicatory address, a reception was held for distinguished guests at Galveston, with a gigantic fireworks display ending the outdoor festivities. The Miss Texas pageant was the climax of the eventful day.

Legal speed on the new road is sixty miles an hour during the day and fifty-

five miles, at night. A comfortable capacity for the new concrete super-highway is estimated at 125,000 vehicles. The daily average at the Houston end is about 75,000; at the Galveston end, 15,000.

The Freeway was first envisioned late in the 1920's by Ross S. Sterling, former chairman of the Texas State Highway Commission. He initiated the surveys which ended in construction of a four-lane road from the Galveston city limits to the Texas City "Wye" about six miles north.

A few years later, a short-lived movement was started to construct an expressway over the route of the old inter-urban railway, but the right-of-way proved to be too narrow and expensive.

Passage of the Federal Aid Highway Act of 1944, in which twenty-five per cent of the funds were earmarked for urban highways, revived the proposed Houston-Galveston expressway. The first contract for a three-mile section within Houston's boundaries was let two years later.

The Houston project, which later was supplemented by an additional six miles, was opened to traffic in October of 1948. Since then, the nine miles has been traveled an estimated 252,000,000 vehicle miles. Resulting savings are placed at \$12,190,000. Construction and right-of-way costs totaled \$15,600,000.

Cost of laying out the fifty-mile traffic artery and providing the right-of-way between "America's Industrial Frontier" and the "Oleander City" was \$28,643,521. The state and federal governments each contributed one-half of the \$23,964,386 construction cost; Houston, Harris County, Galveston City and Galveston County, the balance for rights-of-way.

Construction materials used on the new Freeway since World War II would fill 47,430 railroad cars, or make a train 450 miles long. Included were 1,340,307 tons of sand-shell; 301,481 tons of sand; 583,636 tons of gravel; 119,315 tons of cement; 6,005 tons of asphalt; 10,199 tons of reinforcing steel, and 10,685 tons of structural steel.

Not included in the tabulation are the thousands of lineal feet of concrete pipe used in the sewers and culverts. The underground drainage system cost practically \$2,000,000. Its fifty-mile network ranges from eight-inch pipes to nine-by-nine-foot concrete structures.

Below—Stretch of the Gulf Freeway, the \$28,643,000 toll-free expressway built between Houston and Galveston by the State of Texas.



The Gulf Freeway is a limited access route. In the urban section through Houston the freeway is designed for a speed of fifty miles an hour. It has two 36-foot roadways separated by a four-foot median strip. There is a 10-foot emergency parking lane adjacent to the outside lane in each direction as a refuge for disabled vehicles.

Movements in and out of the central Houston business district are provided by use of four feeder streets. Two run in each direction. These four streets, each approximately a mile in length, cross eighteen streets at grades, with the traffic controlled by an inter-connected system of signal lights. Each intersection is controlled by a triple-dial controller for maximum flexibility.

The rural section of the freeway consists of two 24-foot concrete slabs separated by a 40-foot depressed median. Ten-foot emergency parking lanes are provided in each direction. Rural type frontage roads are provided where needed. The frontage roads are 20 feet wide with sand-shell base and asphalt wearing surface.

The term "freeway" is misleading when applied to the entire length of the Gulf project, according to W. J. Van London, engineer-manager of the Houston urban expressway. Only that section from Dowling Street in Houston to the South Houston-Garden Villas Road, a distance of 8.5 miles, is actually a freeway.

From that point to the Galveston Wye, or 29.3 miles, the freeway is a "limited access" road so designed that it can be converted into a freeway as the adjacent area develops and traffic volumes on the freeway and cross-roads increase to a point where the change can be justified.

In the first 8.5 miles, there are 14 street and railroad overpasses and traffic interchanges, while in the next 29.3 miles, there are only five. On the first five miles there are six freeway traffic lanes. From this point to the Galveston city limits there are four traffic lanes.

The service, or frontage roads extend to the South Houston-Garden Villas road. Short sections of frontage roads have



Above—The Galveston Wye, looking southeast, viewed from the Houston to Galveston lanes at beginning of overpass structures.

been provided at several other locations. Others will be constructed as needed. Additional overpasses also will be built as traffic on cross-roads increases. Three such projects are now under consideration.

Mr. Van London points out that the urban section of the project cost nearly two million dollars a mile, while the rural section required expenditure of about one-sixth of that figure or about \$350,000 a mile.

The Freeway was designed and constructed under the direction of the Texas State Highway Commission, E. H. Thornton, Jr., chairman, Fred A. Wemple and Robert J. Potts, members, and D. C. Greer, state highway engineer. Jim Douglas, district engineer, was in charge of the rural section and Mr. Van London, engineer-manager in charge of the Houston urban part.

Future plans for urban expressways in Houston include six miles of double-decked routes proposed by Mr. Van London at a cost of \$30,000,000. These would be joined with the Gulf Freeway to relieve traffic problems downtown.

A North Expressway would run from the Freeway to a point near the South-

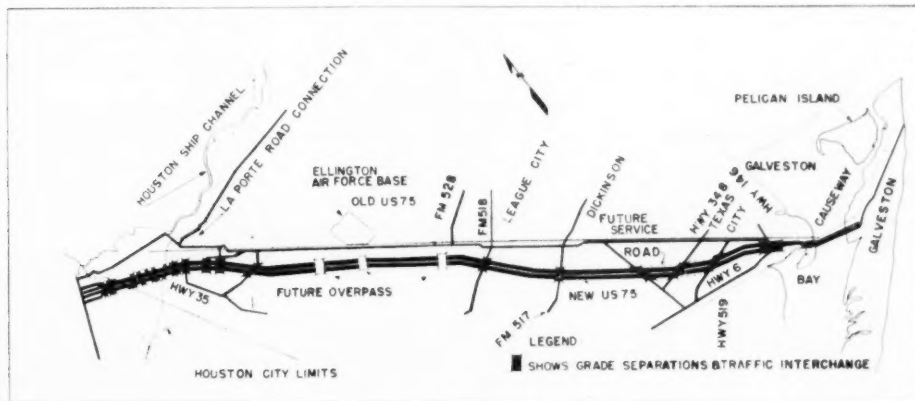
ern Pacific Depot, where it would be joined to the East-West Expressway carrying U. S. Highway 90 traffic. The double-decked expressways would cost \$5,000,000 per mile. Entrance and exit ramps would cost \$3,500,000 a mile.

A six-lane connecting link between the Gulf Freeway and LaPorte Road is nearing completion. The eight-mile Jensen Drive Expressway is also under construction. This \$15,000,000 artery will carry traffic from downtown Houston to Highway 59. The Buffalo Drive express route has been finished by the City of Houston.

Two other engineering feats aimed at alleviating traffic conditions in the Houston area are the Washburn tunnel and the Baytown-LaPorte tunnel under the Houston ship channel. The Washburn project is completed; the Baytown tunnel is slated for finish in 1953.

The three major contractors who did the urban part of the Houston-Galveston project within the Houston boundaries were Brown & Root, Inc., Farnsworth & Chambers Co., Inc., and F. M. Reeves & Son. Contractors for the rural section included Gulf Bitulithic Co., Harry Newton, Austin Road Co., R. W. Smith, Harrison Engineering Co., and the M. & J. Co., also the Farnsworth & Chambers firm.

Below—Route of the new Gulf Freeway between Houston and Galveston.



\$923,000,000 Atomic Awards Made

Award of construction contracts for expansion of the U. S. Atomic Energy Commission's gaseous diffusion plants at Oak Ridge, Tennessee, and Paducah, Kentucky, was announced recently by M. W. Boyer, AEC General Manager.

A \$464,000,000 addition at Oak Ridge will be built by the Maxon Construction Co. of Dayton, Ohio. At Paducah, the prime contract on a \$459,000,000 addition to the uranium-235 separation plant now under construction has been awarded to F. H. McGraw and Co. of Hartford, Connecticut. McGraw is also contractor for the production facilities now being built at Paducah.

Mr. Boyer said that a substantial part of the work at both sites will be done under fixed price subcontracts.

Mr. Boyer said that the following architect-engineer firms already are at work planning and designing the new facilities:

Giffels and Vallet, Inc., Detroit—design and supervision of plant construction;

Sargent and Lundy, Inc., Chicago—design of high-voltage power distribution systems and substation.

Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp., will operate both new plant additions.

Tight construction schedules and the urgency for increasing production facilities were important factors in selecting Maxon and McGraw, both of whom have had experience in building gaseous diffusion facilities, Mr. Boyer said. Their selection will assure maximum speed and efficiency in constructing the new plants.

Funds for the Oak Ridge and Paducah expansions were included in the 1953 Independent Offices Supplemental Appropriation Act signed by President Truman on July 14, 1952. This measure appropriated a total of \$2,896,894,000 for the Commission.

The new uranium-235 separation facilities at Paducah will be built within the present borders of the Paducah site, and by the same prime contractor which is building the facilities now under construction there, F. H. McGraw & Company of Hartford, Conn.

However, as much of the work will actually be performed by competitive bid, fixed price contracts as is possible without delaying the tight construction schedule, according to S. R. Sapirie, manager of the Oak Ridge operation.

The proposed Paducah project will about equal in cost the current construction program, which got under way early in 1951. Upon completion, the new plant, like those now being built, will substantially increase the nation's production of fissionable material for use in weapons or as fuel in nuclear reactors.

The expansion is not expected to increase employment over the present level of about 23,000 workers. In fact, employment is expected to decline somewhat before the new facilities are well under way, and then continue for some time at that lower level. In other words,

Mr. Sapirie explained the project will expand employment over a longer period of time rather than increase the numbers employed.

The combined construction program at Paducah will be under the direction of the Paducah Area office, a branch of Oak Ridge Operations. Acting manager of the Paducah Area is E. A. Wende.

Directing construction for the McGraw Company will be Fred J. Mayo, vice president of the firm and now its project manager at Paducah.

The greatly increased power requirements of the expansion will be met jointly by the Tennessee Valley Authority and Electric Energy, Inc. Each of these agencies is presently building a power plant to supply half of the million kilowatts needed for the facilities now being built. Of the new plant's requirement, TVA is expected to furnish 75 per cent and Electric Energy 25 per cent.

The new unit of the uranium-235 separation facilities, to be built in the K-25 area at Oak Ridge and to be known as K-33, will be built by Maxon Construction Co. of Dayton, Ohio, and other contractors and subcontractors.

Mr. Sapirie said as much of the work will actually be performed by competitive bid, fixed price contracts as is possible without endangering the construction schedule.

Upon completion, K-33 will substantially increase the nation's production of fissionable material for use in weapons or as fuel in nuclear reactors.

Employment of construction personnel will begin to accelerate as rapidly as availability of plans and materials permits. Details of the construction schedule, including expected completion dates, will not be disclosed, Mr. Sapirie said.

The entire project will be handled for the AEC by the recently established Oak Ridge Construction Area office of Oak Ridge Operations headed by Ned Williams as manager and William A. Bonnet as deputy manager. This office also directs all other construction in the Oak Ridge area.

Much of the actual construction will be performed by specialty contractors, Mr. Sapirie explained. Two of such firms already have been selected: Edenfield Electric, Inc., Nashville, which will erect and install some of the electrical equipment, and Kaighin and Hughes, Toledo, which will perform some of the mechanical work.

Funds for the new Oak Ridge gaseous diffusion plant, plus a similar half-billion-dollar addition to the AEC's Paducah project, were included in a supplemental appropriation bill passed by the Congress just before it adjourned July 7 and signed by the President July 14. The bill provided \$2,896,894,000 for the Commission's program.

A E.C. is now constructing its hydrogen bomb plant in Aiken, Barnwell and Allendale counties, South Carolina, and plans a \$1,200,000,000 project in the Ohio valley to make uranium-235.

Military Construction Set at \$3,027,752,000

The unified public works construction bill submitted to Congress by the Department of Defense included projects involving an estimated expenditure of \$3,027,752,000 for Army, Navy, Air Force and Marine installations throughout the United States and the rest of the world.

Continental United States projects proposed for the four services totaled \$1,212,844,000. This included \$178,809,000 for the Army; \$174,044,000 for the Navy; \$859,991,000 for the Air Force. Foreign installations totaling \$242,555,000 were divided \$68,617,000 for the Army; \$34,839,000 for the Navy and \$139,099,000 for the Air Force. Classified facilities for the Army would cost \$26,310,000; for the Navy, \$28,972,000; for the Air Force, \$517,071,000, these totaling \$572,353,000.

The sixteen southern states would get \$672,372,000 for the work, according to figures released by Robert A. Lovett, secretary of defense. These include \$30,555,000 for Alabama; \$47,829,000 for Arkansas; \$126,173,000 for Florida; \$41,811,000 for Georgia; \$23,172,000 for Kentucky; \$48,093,000 for Louisiana; \$39,818,000 for Maryland; \$44,378,000 for North Carolina; \$32,430,000 for Oklahoma; \$21,081,000 for South Carolina; \$13,355,000 for Tennessee; \$168,469,000 for Texas; \$32,424,000 for Virginia, and 4,000 for the District of Columbia.

The breakdown of the southern projects includes:

ALABAMA

Army—\$7,436,000—Fort McClellan, Anniston, \$893,000; Redstone Arsenal, \$6,447,000; Camp Rucker, \$96,000;

Navy—\$94,000—Naval Magazine, Theodore, \$94,000;

Air Force—\$23,025,000—Craig base, Selma, \$2,402,000; Birmingham modification center, \$1,603,000; Brookley base, Mobile, \$4,935,000; Gunter base, Montgomery, \$1,971,000; Maxwell Field, Montgomery, \$12,114,000;

ARKANSAS

Army Camp Chaffee, Fort Smith, \$461,000;

Air Force—Little Rock Air Force Base, Little Rock, \$31,165,000; Blytheville Municipal Airport, Blytheville, \$16,203,000;

FLORIDA

Navy—Naval Supply Depot, Jacksonville, \$682,000; Key West Aqueduct, Florida City to Key West, \$495,000; Marine Corps Station, Miami, \$3,734,000; Richmond, \$96,000;

Air Force—Homestead-Dade County Airport, Homestead, \$31,516,000; Lakeland Airport, Lakeland, \$19,167,000; MacDill, AFB, Tampa, \$8,669,000; Venice Municipal Airport, Venice, \$3,651,000; Pinecastle AFB, Orlando, \$11,044,000; Tynndall AFB, Panama City, \$1,835,000; Lynn Haven (Petroleum Storage Area), Panama City, \$72,000; Palm Beach County International Airport, W. Palm Beach, \$1,200,000; Patrick Air Force Base, Cocoa, \$40,770,000; Eglin Air Force Base, Valparaiso, \$3,242,000;

GEORGIA

Army—Fort Benning, Columbus, \$5,753,000; Camp Gordon, Augusta, \$125,000; Fort McPherson, Atlanta, \$42,000; Camp

Stewart, Hinesville, \$1,024,000;

Navy—Marine Corps Depot of Supply, Albany, \$14,463,000; Naval Supply Center, Byron, \$11,072,000;

Air Force—Hunter Air Force Base, Savannah, \$6,137,000; Moody Air Force Base, Valdosta, \$2,112,000; Dobbins, Air Force Base, Marietta, \$1,083,000;

KENTUCKY

Army—Fort Campbell, Clarksville, Tennessee, \$5,125,000; Fort Knox, Louisville, \$16,902,000;

Air Force—Godman Air Force Base, Fort Knox, \$1,145,000;

LOUISIANA

Army—Camp Polk, Leesville, \$608,000; New Orleans Army Base, New Orleans, \$80,000;

Air Force—Barksdale Air Force Base, Shreveport, \$3,356,000; Lake Charles Air Force Base, Lake Charles, \$12,098,000; Solman Field, Monroe, \$23,755,000; Houma Gunnery Range, Houma, \$3,892,000; Alexandria Municipal Airport, Alexandria, \$4,324,000;

MARYLAND

Army—Aberdeen Proving Ground, Baltimore, \$6,850,000; Army Chemical Center, Baltimore, \$800,000; Camp Detrick, Frederick, \$17,197,000; Fort George G. Meade, Baltimore, \$3,434,000;

Navy—Naval Academy, Annapolis, \$1,800,000; Naval Communication Station, Annapolis, \$1,616,000; Allegheny Ballistics Laboratory, Cumberland, \$593,000; Naval Air Test Center, Patuxent River, \$4,767,000; Hydrographic Office, Suitland, \$687,000; Naval Ordnance Laboratory, White Oak, \$428,000;

Air Force—Headquarters, Air Research & Development Command, Baltimore, \$1,646,000;

NORTH CAROLINA

Army—Fort Bragg, Fayetteville, \$15,325,000;

Navy—Naval Auxiliary Landing Field, Edenton, \$195,000; Naval Air Facility, Weeksville, \$237,000;

Air Force—Raleigh-Durham Municipal Airport, Raleigh-Durham, \$18,895,000; Seymour-Johnston Field, Goldsboro, \$9,726,000;

OKLAHOMA

Army—Fort Sill, Lawton, \$4,374,000;

Air Force—Clinton Naval Air Station, Clinton, \$13,556,000; Ardmore Municipal Airport, Ardmore, \$4,237,000; Vance Air Force Base, Enid, \$7,621,000; Tinker Air Force Base, Oklahoma City, \$2,642,000;

SOUTH CAROLINA

Army—Fort Jackson, Columbia, \$182,000;

Navy—Marine Corps Auxiliary Landing Field, Beaufort, \$3,792,000; Naval Ammunition Depot, Charleston, \$535,000; Naval Shipyard, Charleston, \$7,329,000;

Air Force—Myrtle Beach Airport, Myrtle Beach, \$9,243,000;

TENNESSEE

Air Force—McGhee-Tyson Airport, Knoxville, \$1,355,000; Arnold Engineering Development Center, Tullahoma, \$12,000,000;

TEXAS

Army—Fort Bliss, El Paso, \$5,036,000; Fort Hood, Killeen, \$10,516,000;

Air Force—Biggs Air Force Base, El Paso, \$773,000; Carswell Air Force Base,

(Continued on page 37)

Steel Bulkhead Built at Carrier Base



Above—Mayport carrier basin near Jacksonville, Fla., will be the only harbor between Norfolk and San Diego large enough to accommodate the Navy's big aircraft carriers. The steel bulkhead which surrounds the project is one of the largest ever constructed in Florida, containing nearly eight and one-half million pounds of steel.

One of the largest steel waterfront bulkheads ever constructed in Florida is nearing completion at the Navy's new Mayport Carrier Basin near Jacksonville.

Literally a curtain of steel to separate land from water, the wall reaches down from 38 to 53 feet below water level and extends for more than a mile around the aircraft carrier port being built near the mouth of the St. Johns River.

Nearly eight and a half million pounds of steel sheet piling, rolled on the mills of United States Steel and supplied through its Tennessee Coal and Iron Division, at Birmingham, Ala., have been driven down into the sandy bottom of the harbor to make a sheltered harbor of sufficient size to berth America's largest carriers.

To be ready for operation within a few months, the basin will be the only port between Norfolk and San Diego of sufficient size and depth to permit the entry of the Navy's largest vessels. Construction work was begun approximately a year ago.

First developed during World War II, the Mayport facility is an auxiliary unit of the big Jacksonville Naval Air Station, 20 miles away. During the last war, it served as a small boat section base, into which mine sweepers and other smaller naval craft were brought for docking and repairs. It was also equipped with housing facilities for naval personnel assigned to land duty, and contained several runways for Navy aircraft. Since 1946, it had been out of service and had been manned only by a small maintenance crew.

In addition to mooring and minor repair facilities for the carrier itself, a modern airfield is being built. Existing runways are being rebuilt and new ones under construction, including an 8,000-foot landing strip for jet planes. At the dock, cranes may be installed to lift planes from the flight deck of the carrier, for storage, maintenance or inspection in the Mayport storage area or for flight to the main station at Jacksonville.

Building the basin has been a construction and engineering task of major proportions. To accommodate vessels of such great draft, it was necessary to increase the depth to 42 feet, far below the original level. Because of the highly fluid nature of the sandy banks surrounding the basin, permanent deepening could not have been accomplished without first building sturdy bulkheads around the entire inland perimeter.

Large enough to permit a carrier to turn around and head back to sea, the basin is 3,000 feet long and 2,000 feet wide. Building a sand-tight wall around it required thousands of strips of sheet piling, each more than a quarter of an inch thick and about a foot and a half wide, and ranging up to 60 feet in length.

To sink the piling into place, each piece was first "jetted" into the sand, being interlocked with the neighboring piece by means of connecting devices built into the piling. In jetting, a hose with a high velocity nozzle is strapped near the bottom of each pile, and then, with the pile held in an upright position, a stream of water at tremendous pressure literally

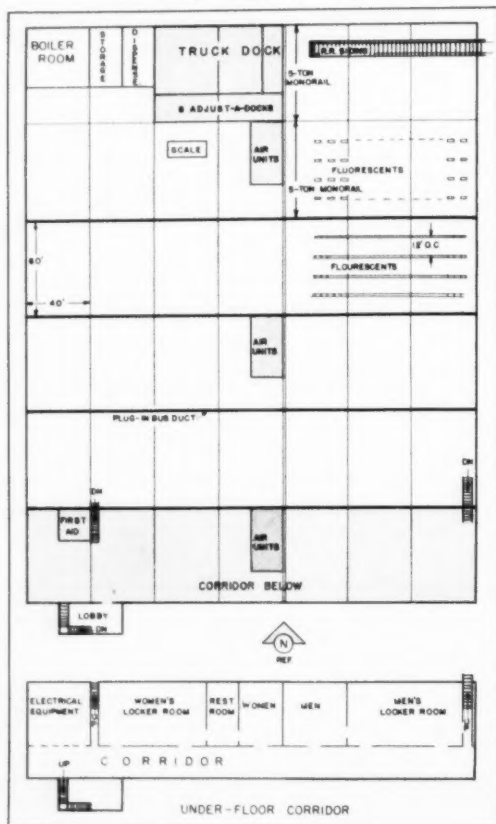
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Hampstead Tool Plant Described



Above—Simple functional design for the 100,000-square foot structure engineered and built at Hampstead, Md., for Black & Decker Manufacturing Co. by the Austin Co. All employee service facilities are located in a 40-foot basement area paralleling the principal facade. As expansion plans are carried out by increasing the depth of the structure, this basement service area and access corridor would be located midway between the front and back and would be extended as expansion was made to right and left. Corrugated transite and sash used in the upper wall areas would be salvaged in the extension process. The building has a sill wall of selected common brick on three sides. The west sill wall, out of sight at the left, is of concrete block. This wall is at the side where the initial expansion will occur.

Below—Plan of the new Hampstead plant, showing the single floor and partial basement that will become part of the facility tunnel as the building is expanded. Workers enter the lobby and descend to the locker area or pass directly through to the manufacturing area. Stairs lead from the basement directly into the work area. Air handling units are mounted overhead in the truss space and comprise two systems per platform.



Black & Decker Manufacturing Co. recently opened its 100,000-square-foot Hampstead, Md., branch. The new plant is so designed that it can ultimately be expanded to a million square feet, all of which would be on one floor. Traffic corridors and employee service facilities provided on the lower level, in the initial unit, would be extended to keep the production level permanently free of obstructions as the plant grows. This aspect of the new plant, which has been designed and built by the Austin Co., will preclude the necessity for multi-level operation which has complicated the utilization of the Towson site where the company now has a total of 276,000 square feet of production space.

The new plant is located on a 185-acre tract with direct access to the Western Maryland Railroad over a 1,329-foot siding, which terminates in the receiving bay inside the building on the north, where six enclosed truckloading docks have also been provided for receiving and shipping. Expansion of the initial unit by extensions to the south, east and west will not disturb these facilities, which are now at the incoming and outgoing ends of a U-shaped production layout.

Adoption of wide column spacing—40 by 60-foot with 15-foot vertical clearance and the use of Austin's "Unit-area System" for the installation of heating, ventilating and power distribution equipment insures maximum adaptability of the floor space to meet any future operating requirements. The unit-area platforms have been equipped with present provision for mechanical ventilation, but which can be readily supplemented to include conditioning of the air. The equipment platforms were raised into position in the trusses with all of the principal air handling units already in place.

Flexibility of this initial building unit has been proved from the start. The building was needed to reduce congestion at the Towson plant, and was to house several of the large, space-consuming operations. An additional floor area of 100,000 square feet was determined to be the minimum required to achieve efficient operations at both plants. The building was designed before any final production plans had been made.

The wide column spacing, and ready availability of light, power and ventilation made possible rapid layout of production processes and machinery once the limits of the 100,000-square-foot space and the scope of operations were known. It was possible to position all equipment in the best possible locations to achieve good flow of materials and good interdepartmental relationships.

Although the building includes commercial projected sash 4 feet high, the light that counts is furnished by 30 rows of fluorescent fixtures mounted in channels 12 feet on centers running east and west. The building is presently divided into two areas; the south 240 feet are designated manufacturing areas and are covered by continuous strips of light to give 50 foot-candles; the north 120 feet are

storage and service areas and are wired for continuous lighting but have only a portion of the bulbs, ballasts and starters installed to give a light level of 30 foot-candles. At any time, components can be mounted in the fixtures in this end of the building to raise the level to 50 foot-candles.

The partial basement areas, truck dock and boiler room are lighted by incandescent lamps and give an average illumination of 20 foot-candles. The four 400-amp, 480 277-V, 3-phase, 4-wire, 60-cycle plug-in bus ducts running east and west over the manufacturing area are another indication of the flexibility of this building.

The heating system for the plant has been carefully planned to meet the requirements of each of the expansion stages. The initial building contains a boiler room that now houses a single 250 Bhp fuel oil, natural gas or combination fired package steam generator that produces steam at 50 psig for all heating needs. Provision has been made for installation of a second boiler in this room to meet the first expansion stages. Eventually there will be a separate boiler house.

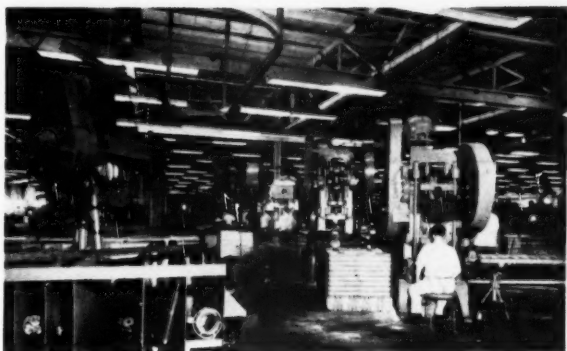
Primary heating and ventilating of the building are accomplished by six air handling units mounted in groups of two on platforms in the truss spans. These platforms hold steam coils, fans, filters, mixing chambers and duct outlets to clean and temper all the air drawn into the building. They include space for future cooling coils if they should be needed. Steam coils receive 50 psig steam for heating and tempering fresh air or re-circulated air depending on conditions.

The base and lobby are heated by finned tube radiation with forced hot water circulation. Supplementary heat for the main floor is provided by propeller type unit heaters mounted around the perimeter of the building, four at each wall, four in the truck dock and one in the boiler room. Nine power roof ventilators over the manufacturing area provide normal winter and supplementary summer ventilation, and spot exhaust to meet process needs.

Control of the heating system is electro-pneumatic and can be varied to suit the season and the time of day. Maximum and minimum outside air, and return air dampers, and automatic steam control valves of 1/3 and 2/3 total coil capacity function together to give economical heating. Each set of two units has a "summer-winter" switch to cycle the heating and which can be used to purge the building in winter by admitting 100 per cent outdoor air.

One master "day-night" switch shuts down exhaust fans and positions dampers for 100 per cent recirculation at night. At night, the air handling units operate intermittently and then only if the unit heaters cannot maintain the 55 degrees temperature. The six supply fans operate continuously while the building is occupied.

Deep well water supplies all the needs of this plant. It is stored in a 125,000 gallon, 30 foot diameter gravity tank at a height of 125 feet, which supplies both domestic and wet-pipe sprinkler system



Above—The 40 by 60-foot column spacing and 15-foot clearance in the new Black & Decker plant are intended to accommodate any possible operational requirements. Unit area platforms installed in the trusses throughout the building to accommodate mechanical equipment have been equipped with convertible air handling units with present provision for mechanical ventilation. Lighting of 30 foot-candles initially provided in this area can be increased by installation of additional fixtures on the continuous raceways. Wood block floor has been installed in the interests of employee comfort, maintenance and long service life.

water. The sprinkler system is automatic and the water tank is controlled so that at all times there will be at least 100,000 gallons of water available for fire service.

To meet local fire regulations requiring that the quantity of water in the storage tank assigned for fire service be replaceable in eight hours (when the well water flow was not equal to the required rate) it was necessary to construct a reservoir on the site. Capacity of the reservoir is 220,000 gallons and it supplies water to the tank and directly for process uses. It receives water from three wells, rainwater from the building roof and clear process water return.

A complete sewerage disposal plant has been built out of the way of all future construction. This system plus the two drains at each column in the south half of the building, comprising an underfloor piping grid, has introduced a new flexibility into Black & Decker operations.

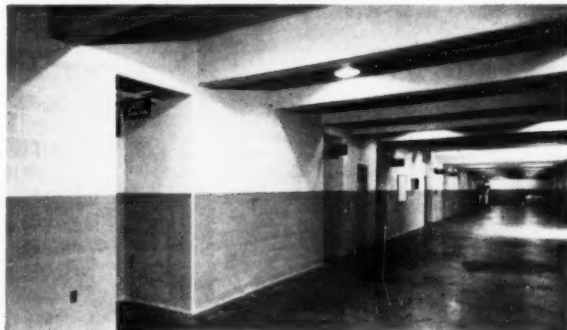
One drain is for clear water that returns to the reservoir after such uses as

cooling the presses, and the other carries fouled water to the treating plant. This prevents loss of time previously required to dump containers and wastes at a point remote from manufacturing areas.

The building has smooth red face brick up to sill height and corrugated asbestos siding backed with insulation. The flat roof is 20-year built up tar and gravel on 2-5/8 inch precast insulating deck. The working areas of the building have a 15-foot clear height. Because of its long life and comfort to employees, the plant floor is two-inch southern yellow pine creosoted blocks on a six-inch concrete slab.

Materials will be received and finished goods shipped from the warehouse area which is flanked on one side by the enclosed truck and rail dock. Materials will be handled in this area by one five-ton monorail crane traveling east and west in either of the two most northerly bays. It switches between bays by transfer point.

Below—Employee facilities are adjacent to the wide service corridor that extends under the principal facade. The deep floor beams have been installed to accommodate loads up to 400 pounds per square foot on the production level and help conceal the incandescent lighting sources. Average illumination in this corridor is 20 foot-candles.





Above—New Fifty-First Street bridge across the Arkansas River at Tulsa, Okla. is one of the Sooner State's biggest bridge jobs since modern World War II. Built at a cost of \$1,135,897, the 2,400-foot long structure carries two 27-foot divided roadways for two-lane traffic in each direction and four-foot pedestrian walkways. More than 4,000 tons of steel, including 2,095 tons of structural shapes and 1,094 tons of plate, were required for the project. The structural and plate were supplied from mills of United States Steel through the Tulsa district sales office of its Tennessee Coal and Iron division. General contractor for the span was M. E. Gillioz, of Monett, Mo. Steel fabricators were Robberson Steel Co. and Capitol Steel & Iron Co., Oklahoma City, and Flint Steel Corp., Tulsa.

Oklahoma Awards 130 Miles of Construction

Oklahoma's highway commission dared the critical steel situation at its July meeting when it let contracts for 130 miles of construction requiring 613 tons of reinforcing and 857 tons of structural steel.

Awards on 36 construction jobs and painting 108 steel bridges ran up to \$4,608,176 or \$274,644 under estimated costs, according to Director C. A. Stoldt.

The commission got a surprise when two of the five bids received on an 800-foot steel bridge on U.S. Highway 66 near Clinton were less than the \$598,880 estimate.

The successful bidder, Oklahoma Paving Co., Oklahoma City, bid \$598,880 or more than \$20,000 under the estimate.

The structure will require an estimated 500 tons of structural steel.

It was one of 11 bridges included in the letting. Low proposals on projects involving four other bridges were disappointed because they topped the estimates too much, commission members say.

The commission will skip a contract letting in August and has set Sept. 8 as the next award date.

July awards follow:

LeFlore County—F-84(1), U.S. 271 from Spiro northeast 6.119 miles 8-inch Portland cement paving 24 feet wide, 4-foot gravel shoulders, estimate, \$379,839; low bidder, Jack Briscoe, Stillwater, \$394,160;

Major County—SAP-93(4) Gr., S.H. 8 from 3.5 miles north of Okeene north to S.H. 58, 6.943 miles 32-foot roadbed, estimate, \$86,436; low bidder, G. E. Keck, Fairview, \$96,338;

Custer County—SAP-145(5), U.S. 66 at Washita river east of Clinton, 1.028 miles

40-41-foot roadbed, 3/4-inch Portland cement paving 24-41 feet wide, 800-foot I-beam span bridge 28 feet wide, 135-foot timber trestle detour bridge, reinforced concrete culvert, estimate, \$619,778; low bidder, Oklahoma Paving Co., Oklahoma City, \$598,880;

Caddo County—S-176(2) Co., county road from S.H. 8 west of Lookeba, west, 2.467 miles 6-inch asphaltic stabilized base, 22-foot single bituminous paving, estimate, \$24,114; low bidder, Smith Brothers, Noble, \$23,220;

Logan-Payne—F-176(3) Pt. 1 Gr., S.H. 51 from U.S. 77 east, 7.220 miles 34-foot roadbed, estimate, \$110,882; low bidder, Smith Brothers, \$124,326;

Payne County—F-176(3) Pt. 2 Gr., S.H. 51 continuation of above project, 1,900 miles similar construction, estimate, \$35,211; low bidder, Smith Brothers, \$39,597;

Logan-Payne—F-173(3) Pt. 1 Surf., S.H. 51 from U.S. 77 east, 7.220 miles 24-foot single bituminous paving, 5-foot single bituminous shoulders, 8-inch soil subbase, 7-inch rock base, estimate, \$416,376; low bidder, Mullinix Construction Co., Oklahoma City, \$416,312;

Payne County—F-176(3) Pt. 2 Surf., S.H. 51 continuation of above project, 1,900 miles similar construction, estimate, \$108,778; low bidder, Mullinix Construction Co., \$108,699;

McCurtain County—S-257(2) Co. Pt. 1 Rdy., county road from Valliant northeast, 5.827 miles 22-foot double bituminous paving, estimate, \$29,843; low bidder, G. I. Construction Co., Meeker, \$30,883;

McCurtain County—S-257(3) Pt. Rdy., county road continuation of above project, to Wright City, 2.905 miles similar

construction, estimate, \$13,662; low bidder, G. I. Construction Co., \$14,100;

McCurtain County—S-257(3) Co. Br., county road .095 mile repair two bridges above location, estimate, \$18,720; low bidder, Brewer & McMichael, Holdenville, \$17,982;

McCurtain County—S-258(3) Co., county road in Wright City, .650 mile 22-foot double bituminous paving, estimate, \$3,194; low bidder, G. I. Construction Co., \$3,308;

Canadian County—S-320(3) Co. Pt. 1 Rdy., county road from Calumet north, 7.368 miles 22-foot single bituminous paving, 6-inch asphaltic stabilized base, estimate, \$70,234; low bidder, Park-Ward Co., Oklahoma City, \$64,566;

Canadian County—S-330(3) Co. Pt. 2 Rdy., county road continuation of above project, to Kingfisher county line, .997 mile similar construction, estimate, \$8,451; low bidder, Park-Ward Co., \$7,751;

Canadian County—S-330(3) Co. Br., county road on above location .044 mile reconstruction of approach spans at North Canadian river bridge, estimate, \$7,304; low bidder, Lee Harris, Cushing, \$7,132;

Cimarron County—S-335(5) Co., county road from 11 miles south of Keys, south, 4 miles 20-foot double bituminous paving, 6-inch caliche base, estimate, \$45,561; low bidder, Broce Construction Co., Woodward, \$45,280;

Ottawa County—F-379(2) Rdy., S.H. 10 from 4.5 miles east of Miami, east, 1.720 miles 8-inch Portland cement paving, 7-foot gravel shoulders, estimate, \$127,872; low bidder, Jack Briscoe, \$127,836;

Ottawa County—F-379(2) Br., S.H. 10 on above location, removal of two bridges at Spring river, estimate, \$12,000; low bidder, Brewer & McMichael, \$10,985;

Jackson County—U-604(1), U.S. 283 on Main street in Altus, 1.958 miles 46-70-foot roadbed, 24-70-foot rock base, 8-inch asphaltic concrete paving, resurfacing and widening, estimate, \$260,911; low bidder, Imperial Paving Co., Oklahoma City, \$260,527;

Comanche County—S-715(2) SH Pt. Gr., S.H. 65 from S.H. 7 north, 7.594 miles 36-foot roadbed, estimate, \$141,317; low bidder, Palleon Construction Co., Oklahoma City, \$117,869;

Comanche County—S-715(2) SH Pt. 2 Gr., S.H. 65 continuation of above project to S.H. 17 at Sterling, 4.822 miles similar construction, estimate, \$114,273; low bidder, Palleon Construction Co., \$99,188;

Comanche County—S-715(2) SH Br., S.H. 65 on above location .060 mile 200-foot and 120-foot I-beam span bridges, 26 feet wide, estimate, \$132,431; low bidder, Duard Pyle, Oklahoma City, \$117,287;

Lincoln County—SAP-176(4), U.S. 66 near Warwick extension to reinforced concrete culvert and drainage ditch cleaning, estimate, \$10,121; low bidder, O. W. Douglas Construction Co., Meridian, \$8,901;

Carter County—SAP-977(1) Pt. 1 Rdy., S.H. 53 from Graham southeast, 7.482 miles 28-foot roadbed, 8-inch soil subbase, 8-inch rock base, 22-foot double bituminous paving, 3-foot single bituminous paved shoulders, estimate, \$278,404; low bidder, Park-Ward, \$250,013;

Carter County—SAP-977(1) Pt. 2 Rdy., S.H. 53 continuation of above project to Milo, 758 miles similar construction, estimate, \$27,812; low bidder, Park-Ward, \$24,154;

Carter County—SAP-977(1) Br., S.H. 53 on above location .049 mile 110-foot I-beam span bridge on Kirk creek, 120-foot I-beam span bridge on Spring creek, both 26 feet wide, and reinforced concrete culvert, estimate, \$93,602; low bidder, Henryetta Construction Co., Henryetta, \$83,601;

Seminole County—SAP-1046(2), S.H. 9 from S.H. 56 east to Hughes county line, 1.997 miles 36-foot roadbed, 6-inch soil sub-base, 7-10-7-inch rock base, 24-foot of 1½-inch blended rock asphalt paving, 6-foot single bituminous paved shoulders, estimate, \$121,907; low bidder, John Ertz Construction Co., Oklahoma City, \$121,880;

Logan County—SAP-1071(1) Pt. 1 Gr., S.H. 74 from Oklahoma county line north, 7.203 miles 36-foot roadbed, three culvert extensions and repairs, estimate, \$87,438; low bidder, Irvin Construction Co., Oklahoma City, \$87,678;

Logan County—SAP-1071(1) Pt. 2 Gr., S.H. 74 and S.H. 33, continuation of above project to S.H. 33, 2.808 miles similar construction, .354 mile roadbed and Portland cement paving at intersection of the two highways, estimate, \$105,087; low bidder, Irvin Construction Co., \$103,796;

Logan County—SAP-1071(1) Pt. 1 Surf., S.H. 74 from Oklahoma county line north, 7.193 miles 24-foot single bituminous paving, 6-foot single bituminous paved shoulders, 12-inch soil sub-base, 8-inch asphaltic stabilized base, estimate, \$312,039; low bidder, Park-Ward, \$252,928;

Logan County—SAP-1071(1) Pt. 2 Surf., S.H. 74 and S.H. 33, continuation of above project, 2.808 miles similar construction to S.H. 33, estimate, \$104,998; low bidder, Park-Ward, \$97,531;

Kiowa County—SAP-1075(1), S.H. 54 from Coopersport north to Washita county line, 6.836 miles 36-foot roadbed, two reinforced concrete culverts, estimate, \$93,536; low bidder, W. D. Fulton Construction Co., Oklahoma City, \$86,028;

Kiowa County—SAP-1075(3) Pt. 1 Rdy., S.H. 54, continuation of above project, 7.170 miles similar construction, estimate, \$117,284; low bidder, W. D. Fulton Construction Co., \$103,004;

Kiowa County—SAP-1075(3) Pt. 2 Rdy., S.H. 54, continuation of above project, 2.972 miles similar construction, estimate, \$52,238; low bidder, W. D. Fulton Construction Co., \$47,315;

Kiowa County—SAP-1073(3), S.H. 54 on above location, 153 mile, 100, 120, 135, 160 and 200-foot I-beam span bridges, each 26 feet wide, and three reinforced concrete culverts, estimate, \$242,981; low bidder, R. R. Tway, Oklahoma City, \$228,085;

Harper-Woods Counties—SAP-1085(1), S.H. 34 from south of Harper-Woodward county line north, 7.973 miles 34-37-foot roadbed, 3-inch gravel surface 24 feet wide, four reinforced concrete culverts, estimate, \$272,909; low bidder, Clark Construction Co., Woodward, \$232,296;

(Continued on page 37)

\$1,921,868 in Low Bids Opened for Kentucky Roads

Low bids received early last month by the Kentucky State Highway Department totaled \$1,921,862. Included were the following projects:

Adair-Russell—S 120(2); S 349(2); SP 1-210; 104-118, Columbia-Sewellton Road, 11.150 miles bituminous penetration macadam on calcium chloride stabilized base, Southern Quarries and Contracting Division of N. Y. Coal Sales Co., Chillicothe, Ohio, \$215,206;

Clay—S 72(4); SP 26-85, Manchester-Barbourville Road, 8.816 miles bituminous surface class I, waterbound macadam base, Kelly Contracting Co., Louisville, Kentucky, \$206,523;

Crittenden—S 125(2); SP 28-206, Ky. 297-Tola Road, 3.013 miles grade, drain and traffic bound limestone, Robinson & Lashbrook, Owensboro, Kentucky, \$116,065;

Henry—S 432(1); RS 52-487; RS 52-27, Peyton-Gest Road, 7.762 miles grade, drain and traffic bound limestone, Cline Construction Co., Pikesville, Kentucky, \$130,182;

Ohio—S 279(1); RS 92-564, Ky. 71-Ky. 54 Road, 9.91 miles grade, drain and traffic bound limestone, Fount Crow, Ltd., Beaver Dam, Kentucky, \$194,122;

Breckinridge—SP 14-193, 7 miles bituminous surface class C-1, L. P. Cavett Co., Lockland, Ohio, \$55,409;

Green-Metcalf—SP (44-96) (85-124), 8.3 miles bituminous surface class C-1, L. P. Cavett Co., Lockland, Ohio, \$62,125;

Henry—SP 52-267, 5.8 miles bituminous surface class C-1, Franklin Construction Co., Frankfort, Kentucky, \$42,402; bituminous surface class F, The Allen Co., Inc., Winchester, Kentucky, \$48,747;

Laurel—SP 63-551, 7.1 miles bituminous surface class C-1 and 2-inch calcium chloride stabilized base, Curtis Cantrill, Middleshoro, Kentucky, \$87,479; bituminous surface class F and 2-inch calcium chloride stabilized base, Gay-Coleman Construction Co., Lexington, Ky., \$107,657;

Marion-Washington—SP (78-322) (115-89), 9.3 miles bituminous surface class C-1, Carey Construction Co. and H. C. Adams, Lexington, Kentucky, \$68,143;

Nelson—SP 90-545, 9.306 miles bituminous surface class C-1, Geoghegan & Mathias, Bardstown, Kentucky, \$46,358;

Pike—SP 98-223, 3.099 miles bituminous macadam surface (limestone aggregate only), Adams Construction Corp., Paintsville, Kentucky, \$53,440;

Taylor—SP (109-108) (109-88), 7 miles bituminous surface class C-1, L. P. Cavett Co., Lockland, Ohio, \$70,861; 3-inch bituminous macadam surface, Carey Construction Co. and H. C. Adams, Lexington, Kentucky, \$87,607;

Trimble—SP 112-138, 5.802 miles reconstruction and bituminous surface class C-1, L. E. Bergin, Covington, Kentucky, \$30,144; bituminous surface class F, Corum & Edwards, Inc., Madisonville, Kentucky, \$69,294;

Webster—SP 117-249, 4.389 miles bituminous surface class C-1, Ellis, Kelly Co., Owensboro-Kentucky, \$50,603;

Madison—RH Group 4 (1952), 5.20 miles

bituminous surface class C-1, L. E. Bergin, Covington, Kentucky, \$22,314; bituminous surface class F, The Allen Co., Winchester, Kentucky, \$21,117;

Adair-Green-Taylor—RS (1-510) (1-530) (44-436) (109-528) (109-548), Coburg-Miami-Cane Valley Road, 4.193 miles reconstruction and traffic bound limestone, Fred Nance Construction Co., Campbells-ville, Kentucky, \$46,450;

Clay—RS 26-685, US 421-Datha-Ky. 578 (Robinson Creek) Road, 4.205 miles reconstruction and traffic bound limestone, Winston Ford Co., Prestonsburg, Kentucky, \$68,936;

Greenup-Boyd—RS (45-631) (10-685) Indian Run Road, 4.183 miles reconstruction and traffic bound slag, Cline Construction Co., Pikesville, Kentucky, \$52,367;

Johnson—RS 58-537, 3.1 miles bituminous surface class C-1 (slag aggregate), Adams Construction Corp., Paintsville, Kentucky, \$18,649;

Martin—RS 80-41, 5.691 miles bituminous surface class C-1 (limestone aggregate), Adams Construction Corp., Paintsville, Kentucky, \$43,582;

Montgomery—RS 87-397, Calk-Lake Road, 1.598 miles reconstruction and traffic bound limestone, A. W. Walker & Son, Mt. Sterling, Kentucky, \$24,957; reconstruction and local bank or creek gravel, L. M. Hart Construction Co., Inc., Lexington, Kentucky, \$27,358;

Nicholas—RS 91-319, Barefoot-Needmore-Blue Lick Road, 5.090 miles grade and drain, Cline Construction Co., Pikeville, Kentucky, \$63,534;

Simpson—RS 107-205, 7.80 miles bituminous surface class C-1, Ferguson & Milliken Paving Co., Inc., \$36,731;

Warren—RS 114-788, Watts Mill Road, 1.024 miles reconstruction and traffic bound limestone, G & R Coal Co., Robbins, Tenn., \$7,617.

Bids received at the early June letting of the Kentucky Department of Highways totaled more than \$2,954,210. Listed by counties, the projects included:

Breathitt—S 266(2); 363 (6); SP 13-27, 15.278 miles bituminous surface Class I, sandstone aggregate, Kentucky Road Oiling Co., Frankfort, Ky., \$224,558;

Estill—S 12(2); SP 33-63, 4.313 miles grade, drain and traffic bound limestone, Licking River Limestone Co.; West Liberty, \$99,839;

Henderson—S 222(1); SP 51-279, 3.011 miles grade, drain and traffic bound river gravel, S. J. Boone, Owensboro, Ky., \$90,972;

Lewis—S 151(3); RS 68-76, 0.549 mile bridge and approaches, using 10 inch steel piles, Davis and Shelton Construction Co., Sandy Hook, \$41,432;

Metcalf—S 137(2); SP 85-144, 3.833 miles grade, drain and traffic bound limestone, G & R. Coal Co., Robbins, Tenn., \$132,454;

Morgan—S 367(1); SP 88-158; SP 88-358, 2.982 miles grade, drain and traffic bound limestone, Kentucky Road Oiling Co., Frankfort, \$110,922;

Russell—S 399(2); SP(104-38) (104-358), 0.888 mile grade, drain and bituminous

(Continued on page 32)



Above—New Chicago Pneumatic Tool plant at Fort Worth, Texas, will cover 130,000 square feet and cost \$4,500,000 to construct and equip. The building will serve as headquarters and manufacturing center for the company's complete line of oil tool products. It was designed and is being built by Walter Kidde Engineers—Southwest, Inc.

Fort Worth Plant Announced by Chicago Pneumatic

Chicago Pneumatic Tool Company, large manufacturer of portable power tools, announces plans to expand its manufacturing facilities for the production of oil well drilling equipment by erection of a new \$4,500,000 plant at Fort Worth, Texas.

The company previously has made its line of three-cone bits, drill collars, tool joints, reaming bits and reamers, rotary subs and junk baskets have been manufactured in the compressor and engine plant at Franklin, Pa.

Walter Kidde Construction Co. has been selected to supervise the architectural and engineering details for the plant which will cover 130,000 square feet. Initial construction began in June. Completion has been set for the first quarter of 1953. Plant personnel will number 500 employees when full production is attained.

The plant site selected is located in the southern section of Fort Worth, and the property fronts on Route 81 which is the main free-way running North and South.

A certificate of necessity has already been granted by the Defense Production Administration covering emergency facilities aggregating \$3,500,000. Sixty per cent of this amount will be subject to amortization over a period of five years.

Chicago Pneumatic Tool Co. is celebrating its golden anniversary as manufacturers of air compressors, portable pneumatic and electric tools, rock drills, and gas and diesel engines. Organized on December 28, 1901, the Company now manufactures over 2000 types of tools and power generating equipment. Most industries use Chicago Pneumatic products. Industrial assembly lines are equipped with pneumatic or electric screwdrivers, drills, and nut runners; heavy construction projects keep on

schedule with the help of Chicago Pneumatic compressors, rock drills, concrete placing equipment and hand tools.

Metal mines, coal mines, and quarries use rock drills for exploratory work and blast hole drilling; shipyards, railroads, automobile plants and automotive repair shops find daily use for Chicago Pneumatic extensive line of time-saving pneumatic, electric and hydraulic tools; the chemical, food textile and petroleum industries use Chicago Pneumatic compressors and pumps for process air; and utilities and industry also depend on diesel engines for power generation.

Residents of Fort Worth, active in the aircraft industry, are best acquainted with the name of Chicago Pneumatic as a manufacturer of aircraft riveting hammers, dimpling and compression riveting equipment, pneumatic or electric drills and nut-runners; and for the numerous actuating mechanism that provide fingertip flight control for the giant B-36 and B-50 planes currently in production.

General offices are in the company's own 10-story building at 6 East 44th Street, New York. It has branch offices in 23 American cities; foreign offices and representatives in the principal cities of Great Britain, Continental Europe, Canada, Australia, New Zealand, South Africa, India, Pakistan, Central and South America, and Mexico.

The Chicago Pneumatic Tool Co. has always been a stable and important factor in America's peacetime industrial expansion; and, as in the past, America's wartime production depends heavily on Chicago Pneumatic products. Manufacturing plants are located in Franklin, Pa.; Garfield, N. J.; and at Utica, N. Y. The new Utica plant with its half million square feet of floor space, is considered to be the ultimate in modern production planning.

galvanized corrugated metal pipe (16-gauge); Wannamaker & Wells, Inc., Orangeburg, \$69,869;

Cherokee County S.C. Docket No. 11,302, F.A. Project No. F1-2575 (7), construction of 360-foot reinforced concrete bridge over Buffalo Creek on Alternate U.S. Route 29 near Blacksburg; consists of 189 cu. yds. of dry excavation, 180 cu. yds. of wet excavation, 24 cu. yds. of rock excavation, 758.34 cu. yds. of cement concrete (Class "A"), 192,640 pounds of reinforcing steel for structures, 995 lin. ft. of steel H piling (10-inch at 42 pounds), 142 lin. ft. of pre-cast concrete tile slope drains and 720 lin. ft. of pipe handrail; C. Y. Thomson Co., Greenwood, \$97,327;

Kershaw County S.C. Docket No. 28,306, F.A. Project No. F-191 (3), construction of 128-foot reinforced concrete bridge, .108 mile of earth graded approaches and .135 mile of earth graded detour roads and detour bridge at Hanging Rock Creek on U.S. Routes 601 and 521 near Kershaw; consists of necessary clearing and grubbing, 4,444 C.Y.H.M. of overhaul, 153 cu. yds. of selected material for shoulders, 2.872 cu. yds. of unclassified excavation, 958 cu. yds. of earth type base course (Pit Material), 176.78 cu. yds. of cement concrete (Class "A"), 42,655 pounds of reinforcing steel for structures, 302 pounds of structural steel (sway braces including painting), 100 tons of riprap, 600 lin. ft. of steel H piling (10-inch at 42 pounds), 90 lin. ft. of pre-cast concrete tile slope drains, 256 lin. ft. of pipe handrail, 310 sq. yds. of removal and disposal of old concrete pavement and necessary untreated timber detour bridge; Wannamaker & Wells, Inc., Orangeburg, \$41,651;

Spartanburg County S.C. Docket No. 42,373, F.A. Project No. S-602, construction of 200-foot reinforced concrete bridge and .072 mile of graded and earth type base course approaches over Lawson Fork Creek on Road 44 at Drayton Mills near Spartanburg; consists of necessary clearing and grubbing, 1,332 cu. yds. of unclassified excavation, 3,396 C.Y.H.M. of overhaul, 51 cu. yds. of selected material for shoulders, 242 cu. yds. of earth type base course (ground surface material), 76 lin. ft. of reinforced concrete pipe culverts, 196 sq. yds. of concrete sidewalk (4-inch uniform), 180 lin. ft. of concrete curb and gutter (3-foot), 2 catch basins (Type 6), one manhole to be adjusted, 250 cu. yds. of riprap, 287 cu. yds. of dry excavation, 171 cu. yds. of wet excavation, 88 cu. yds. of rock excavation, 595.61 cu. yds. of cement concrete (Class "A"), 165,894 pounds of reinforcing steel for structures,

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South Carolina Low Bids Total \$1,867,312

South Carolina last month received low bids totaling \$1,867,312 for seventeen highway contracts. The projects include the following:

Richland County S.C. Docket No. 40,1032, U.S. Route 1, resurfacing with hot laid asphaltic concrete surface course of 12 miles on U.S. Route 1 between Columbia and Kershaw County line; includes 5,000 tons of sand asphalt for super-elevating curves; consists of 183,500 sq. yds. of hot laid asphaltic concrete surface course (100 pounds per sq. yd.) tack coat required; 5,000 tons of hot plant mix sand

asphalt; 500 tons of hot laid asphaltic concrete surface course for patching, and 805 tons of 85-100 penetration asphalt cement; J. F. Cleckley & Co., Orangeburg, \$75,749.

Calhoun County S.C. Docket No. 9,286, F.A. Project No. FG-104(2), Route 6, construction of 116-foot reinforced concrete bridge over Southern Railroad in St. Matthews; consists of 525 cu. yds. of wet and dry excavation, 634.49 cu. yds. of cement concrete (Class "A"), 105,917 pounds of reinforcing steel for structures, 4 catch basins (Type 1) and 190 lin. ft. of 8-inch

One Size

**is enough
in suspenders...**



- but there's no "stretch" in cement!

Tall, short, thin or stout . . . the same pair of suspenders usually will stretch to fit any man. Unfortunately, that's *not* true of air entraining cement—so, in order to get the benefits of proper air entrainment, the concrete that you mix must often be "tailor-made!"

That's because the amount of air actually entrained in concrete is influenced by the other materials in the mix—as well as the air entraining capacity of the cement. Differences in the local aggregate, its gradation, and even the temperature can result in important variations in the amount of air entrained. And because air entraining cement is standardized under rigid Federal and ASTM specifications . . . it just won't "stretch" to fit all situations.

There is, however, a simple and effective way to

avoid this trouble—use regular portland cement and add the *required* amount of any well known air entraining agent at the mixer. That way you'll be sure of concrete that "fits."

Always remember, use air entraining cement only when you *know* local materials and conditions will assure a "fit." And remember, too—portland or air entraining cement . . . there's none better than Hermitage.

* * *

If you have any problems or questions on the use and mixing of air-entrained concrete, the Hermitage Service Engineer will be glad to help and advise you—contact any Hermitage office.



Hermitage Portland Cement Company

American Trust Building, Nashville 3, Tenn.

Portland • High Early Strength • Air Entraining • Masonry

South Carolina Low Bids Total \$1,867,312

(Continued from page 42)

140 lin. ft. of steel H piling (10-inch at 42 pounds) and one moving item; Pennell & Harley, Inc., Spartanburg, \$82,683;

Aiken County—S.C. Dockets Nos. 2,325, Parts 1, 2, 3 & 4, and 2,326, Pts. 1 & 2, F.A. Project No. AS-627 (1), grading and bituminous surfacing of 6,338 miles on Road 62 from Route 28 in Jackson northeasterly to Route 781; of 1,872 miles on Road 299 from Route 28 in Jackson southwest to C. & W. C. Railway Station; and of 1,041 miles on Roads 307 and 308, being streets in Jackson; consists of necessary clearing and grubbing, 28,621 cu. yds. of common excavation, 142,471 C.Y.H.M. of overhaul, 5,413 cu. yds. of selected material for shoulders, 24,913 cu. yds. of earth type base course (Pit Material), 125,309 M.S.Y. of scarifying, mixing, 119,880 sq. yds. of bituminous surfacing (inverted penetration type with seal—two alternates), 3,276 lin. ft. of reinforced concrete pipe culverts, 20 lin. ft. of relaid pipe culverts, 2 drop inlets (24 by 36 inches), 200 lin. ft. of 4-inch tile underdrain, 10 tons of riprap, 2 F.A. Markers, 2 F.A. Project No. Plates, 11,177 lin. ft. of reset fence and one moving item; total length of project, 9,251 miles; Highway Surfacing Co., Greenville, \$119,780;

Aiken-Barnwell Counties—S.C. Dockets Nos. 2,328, Parts 1 & 2, 2,329 & 6,306—F.A. Projects Nos. AS-643 (1), AS-361 (3) & S-693 (1), Pts. 1 & 2, grading and bituminous surfacing of 6,099 miles on Road 54 from Route 781 northeasterly to beginning of pavement near Windsor, and of 2,978 miles on Roads 64 & 215 from Road 33 near Wilflinton via White Pond to U.S. Route 78; consists of necessary clearing and grubbing, 33,540 cu. yds. of common excavation, 125,280 C.Y.H.M. of overhaul, 5,693 cu. yds. of selected material for shoulders, 23,413 cu. yds. of earth type base course (Pit Material), 112,601 M.S.Y. of scarifying, mixing, 107,276 sq. yds. of bituminous surfacing (inverted penetration type with seal—2 alternates), 2,628 lin. ft. of reinforced concrete pipe culverts, 250 lin. ft. of 4-inch tile underdrain, 10 tons of riprap, 5 F.A. Markers, 6 F.A. Project No. Plates, 500 lin. ft. of new 36-inch hog wire fence with one strand of barbed wire, 8,944 lin. ft. of reset fences and 5 moving items; total length of project 9,077 miles; Douglass Construction Co., Aiken, \$102,143;

Anderson County—S.C. Dockets Nos. 4,308, Pts. 1 & 2, 4,372, 4,373, 4,374, 4,377 & 4,378, F.A. Projects Nos. S-647 (1), S-648 (1) & S-649 (1), grading and bituminous surfacing of 699 mile on Road 167 from Route 187 easterly with 435 mile on Road 167 Spur from Road 167 northerly; of 2,837 miles on Roads 228 & 163 from Route 88 northeasterly to U.S. Route 178; of 2,280 miles on Road 189 from Route 187 southeasterly to Road 72 near Sandy Springs; of 1,438 miles on Road 191 from county road east of Sandy Springs southwesterly to U.S. Route 76; of 1,055 miles on Road 216 from Road 140 to Route 88 near Pendleton, and of 1,279 miles on Road 190 from U.S. Route 76 northwesterly to county road east of Sandy Springs; consists of necessary clearing and grub-

bing, 51,492 cu. yds. of unclassified excavation, 95,734 C.Y.H.M. of overhaul, 6,095 cu. yds. of selected material for shoulders, 19,639 cu. yds. of earth type base course (ground surface material), 117,786 M.S.Y. of scarifying, mixing, 111,891 sq. yds. of bituminous surfacing (inverted penetration type with seal—2 alternates), 2,564 lin. ft. of reinforced concrete pipe culverts, 410 lin. ft. of relaid pipe culverts, 400 lin. ft. of 4-inch tile underdrain, 10 cu. yds. of riprap, 6 F.A. Markers, 6 F.A. Project No. Plates, 12,077 lin. ft. of reset fences and 2 moving items; total length of project 10,043 miles; Reeves Brothers Construction Co., Inc., Easley, \$104,414;

Berkeley County—S.C. Docket No. 8,305, F.A. Project No. S-619 (1), grading and bituminous surfacing of 13,446 miles on Road 98 from Route 41 at Huger southerly to Road 33 near Cainho; consists of necessary clearing and grubbing, 69,478 cu. yds. of common excavation, 525,152 C.Y.H.M. of overhaul, 8,585 cu. yds. of selected material for shoulders, 38,324 cu. yds. of earth type base course (pit material), 170,907 M.S.Y. of scarifying, mixing, 163,020 sq. yds. of bituminous surfacing (inverted penetration type with seal—2 alternates), 2,784 lin. ft. of reinforced concrete pipe culverts, 519 lin. ft. of relaid pipe culverts, 300 lin. ft. of 4-inch tile underdrain, 140 tons of riprap, 2 F.A. Markers, 2 F.A. Project No. Plates and 5,732 lin. ft. of reset fences; Davis Moragne, Columbia, \$194,468;

Charleston County—S.C. Dockets Nos. 10,369, 10,371, 10,372, 10,373, 10,374 & 10,375, grading and bituminous surfacing of 2,255 miles on Roads 281, 357, 358, 360 through 363 and 366 through 371, being streets in North Charleston; of 1,342 miles on Road 390 (Parishville Road) from end of pavement southerly to Agricultural Dusting Airport; 1 mile on Road 38 (Eureka Road) from end of pavement northerly; of 1,427 miles on Road 318 from Route 162 southwesterly; of 223 mile on Road 393—Beaufain, Gadsden & Barre Streets in Charleston, and of 1,901 miles on Roads 399 through 403 in Windemere, west of Charleston; consists of necessary clearing and grubbing, 26,446 cu. yds. of common excavation, 97,262 C.Y.H.M. of overhaul, 113,576 sq. yds. of bituminous surfacing (inverted penetration type without seal), 103,257 sq. yds. of stabilized earth base course (asphalt)—4-inch uniform, 12,727 sq. yds. of stabilized earth base course (asphalt)—5-inch uniform, 1,724 lin. ft. of reinforced concrete pipe culverts, 118 lin. ft. of relaid pipe culverts, 13 catch basins (type 1) and 2,350 lin. ft. of reset fences; total length of project 8,148 miles; Dickerson, Inc., Monroe, N. C., \$143,014;

Dorchester County—S.C. Dockets Nos. 18,268, 18,269, 18,270 & 18,272, F.A. Project No. S-280 (2), grading and bituminous surfacing of 2,178 miles on Road 19 from end of bituminous surfacing southwest-erly, of 2,052 miles on Road 173 from Road 19 in Ridgeville southerly to Road 174; of 4,337 miles on Roads 42, 99, 108, 112 & 42, 38 & 106, 110, 111, 117, 107, 120, 105, 44, 116 & 146, 96 & 115, 114, 109 & 113, being

(Continued on page 46)

See Your
FOOTE
Sales Agent

—for
**MultiFoote and
Adnun Pavers**

**MATT A. DOETSCH
MACHINERY CO.
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Top Pavers**

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MACHINERY &
SUPPLY COMPANY
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Chattanooga, Tenn.**

AT LAST..

Adnun Liquid Level: Vertical reading glasses can be set for absolute level or plus or minus. Being mounted on the Cutter Bar Supports and connected by tubing, liquid is directly affected by slope of Cutter Bar.

Reading
Glass
Detail



Positive Leveling Control for Black Top Paving!

- Level up old road perfectly and positively
- Correct accurately for any slope at any station
- Holds level grade without modifying desired crown
- Blend new level shoulder into old crown

NOW, for the first time in the history of black top paving, it is possible to lay a level surface over old road and *hold it* level accurately and positively. The new Adnun Liquid Level combined with the direct lift feature of the Adnun Cutter Bar Screed has made this a certainty. The Adnun Liquid Level permits following fluctuations in grade, visually. Mechanical adjustment on the direct lift Cutter Bar Screed permits instantaneous or gradual corrections to hold the bubble in the level at the desired setting for an absolutely level surface.

You can bring wavy old roads with reverse slopes to "level". You can build dipping shoulders up to level and blend them into old crown. You can correct, accurately, for any slope at any station.

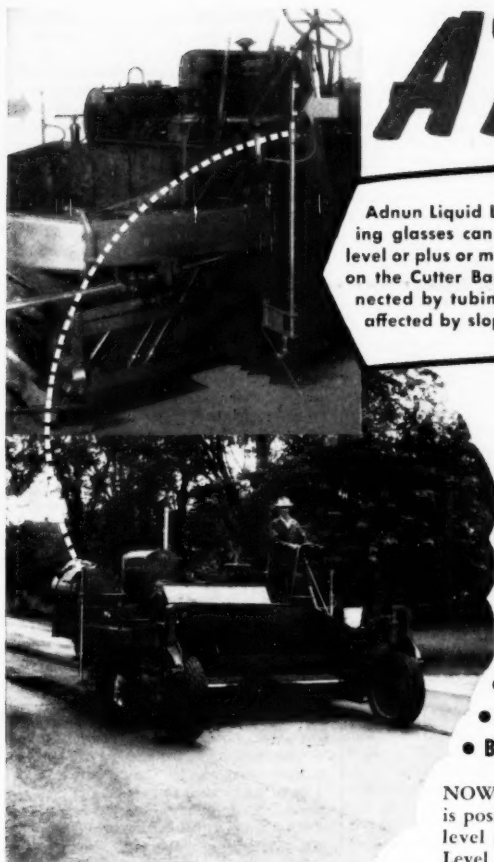
Only a Black Top Paver with a screed having a straight lift can do this. Adnuns make new roads out of old. They do things other pavers won't do. Remember, the important result is a good road. Ask for details.

THE FOOTE COMPANY, INC.
Subsidiary of Blaw-Knox Co.
Nunda, New York

ADNUN

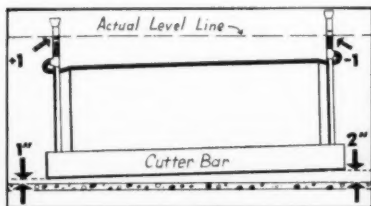
TRADE MARK REGISTERED

BLACK TOP PAVER



Above: Roads of this type are becoming an increasing problem to Highway Departments. They can be leveled with Adnuns.

Below: Diagram of Liquid Level set to lay course 1" at shoulder and 2" at crown. This could be reversed to build up undulating or broken down shoulder.



South Carolina Low Bids Total \$1,867,312

(Continued from page 14)

streets in St. George, and of .730 mile on Roads 156, 158, 159 & 122, 170 & 171, being streets in Summerville; consists of necessary clearing and grubbing, 30,879 cu. yds. of common excavation, 298,831 C.Y.H.M. of overhaul, 2,893 cu. yds. of selected material for shoulders, 27,994 cu. yds. of earth type base course (pit material), 134,667 M.S.Y. of scarifying, mixing, etc., 129,284 sq. yds. of bituminous surfacing (inverted penetration type with seal—2 alternates), 3,192 lin. ft. of reinforced concrete pipe culverts, 339 lin. ft. of relaid pipe culverts, 3 catch basins (Type 1), 1 catch basin (Type 5), 4 catch basins (Type 7), 793 lin. ft. of new 36-inch hog wire fence, 654 lin. ft. of new 24-inch hog wire fence with one strand of barbed wire, 2 F.A. Markers, 2 F.A. Project No. Plates, 18,289 lin. ft. of reset fences and 4 moving items; total length of project 9,297 miles; J. F. Cleckley & Co., Orangeburg, \$149,030;

Fairfield County—S.C. Dockets Nos. 20,269, 20,270, 20,272, 20,274, 20,275, 20,276 & 20,277, grading and bituminous surfacing of 2.084 miles on Road 23 from Route 213 northeasterly to U.S. Route 321 By-Pass near Winnsboro; of .239 mile on Road 110 from Zion Street to Hudson Street in Winnsboro; of .225 mile on Road 104 from Route 34 to Road 12; of 3.101 miles on Road 38 from Route 34 to U.S. Route 321 at Adgers; of 3.631 miles on Road 51 from Route 215 northeasterly to Road 18; of 1.523 miles on Road 114 from Road 48 to Route 213 at Andersons Quarry, and of 1.163 miles on Road 113 from Road 98 northerly to Road 110 in Winnsboro; consists of necessary clearing and grubbing, 126,948 cu. yds. of unclassified excavation, 176,975 C.Y.H.M. of overhaul, 7,424 cu. yds. of selected material for shoulders, 25,337 cu. yds. of earth type base course (ground surface material),

150,980 M.S.Y. of scarifying, mixing, 106,324 sq. yds. of bituminous surfacing (inverted penetration type with prime, with seal—4 alternates), 37,632 sq. yds. of bituminous surfacing, inverted penetration type without prime with seal (emulsified asphalt method), 4,634 lin. ft. of reinforced concrete pipe culverts, 142 lin. ft. of relaid pipe culverts, 78 lin. ft. of 108-inch corrugated metal (sectional plate) pipe—10-gauge, 50 lin. ft. of 132-inch corrugated metal (sectional plate) pipe—8-gauge, 100 lin. ft. of 4-inch tile underdrain, 55 cu. yds. of riprap, 2,500 lin. ft. of terracing, 21,374 lin. ft. of reset fences and one moving item; total length of project 11,966 miles; Spotts & Co., Newberry, \$180,812;

Jasper County—S.C. Docket No. 27,254, F.A. Project No. S-672 (1), grading and bituminous surfacing of 9.681 miles on Route 170 from Route 128 northerly to U.S. Route 17 near Coosawhatchie; consists of necessary clearing and grubbing, 75,763 cu. yds. of common excavation, 343,819 C.Y.H.M. of overhaul, 8,633 cu. yds. of selected material for shoulders, 33,531 cu. yds. of earth type base course (pit material), 121,273 M.S.Y. of scarifying, mixing, 115,593 sq. yds. of bituminous surfacing (inverted penetration type with seal—2 alternates), 2,040 lin. ft. of reinforced concrete pipe culverts, 474 lin. ft. of relaid pipe culverts, 200 lin. ft. of 4-inch tile underdrain, 2 F.A. Markers, 2 F.A. Project No. Plates, 4,600 lin. ft. of reset fences and one moving item; Ballenger Paving Co., Greenville, \$148,112;

McCormick County—S.C. Dockets Nos. 33,266, 33,267, 33,268 and 33,269, grading and bituminous surfacing of 3.399 miles on Road 21 from Road 22 northerly to Road 66 near Bethany Church; of 1.146 miles on Road 65 from Road 33 northerly; of .996 mile on Road 86 from Road 22 northerly, and of .664 mile on Road 142

from Route 283 southerly to Rehobeth Baptist Church; consists of necessary clearing and grubbing, 36,372 cu. yds. of unclassified excavation, 129,609 C.Y.H.M. of overhaul, 3,763 cu. yds. of selected material for shoulders, 12,005 cu. yds. of earth type base course (ground surface material), 71,925 M.S.Y. of scarifying, mixing, 68,284 sq. yds. of bituminous surfacing (inverted penetration type with seal—4 alternates), 2,044 lin. ft. of reinforced concrete pipe culverts, 104 lin. ft. of relaid pipe culverts, 100 lin. ft. of 4-inch tile underdrain, 30 cu. yds. of riprap, 4,875 lin. ft. of reset fences and one moving item; total length of project 6.205 miles; Fox Construction Co., Lexington, \$88,176;

Orangeburg County—S.C. Dockets Nos. 38,378, 38,385, 38,387, 38,390, Parts 1 & 2, 38,395, 38,401, Parts 1 & 2, and 38,402, Parts 1 & 2, F.A. Project No. S-641 (1), grading and bituminous surfacing of 2.761 miles on Roads S-65 & S-260 from Road S-154 easterly and southerly to Road S-50; 5.465 miles on Roads S-196 & S-198 from U.S. Route 178 near Bethel Church easterly, southerly and southwesterly to U.S. Route 178; of .828 mile on Roads S-79 & S-96 near the southern city limit of Orangeburg; of 3.038 miles on Road S-200 from U.S. Route 176 easterly to Road S-82; of 1.729 miles on Road S-81 from Road S-200 to U.S. Route 301; of 1.892 miles on Roads S-65 & S-468 from Road S-260 to the Calhoun County line; of 1.175 miles on Roads S-224, S-225, S-909 & S-910, being streets in Orangeburg, and of .917 mile on Roads S-178, S-258 & S-271, being streets in and adjacent to Bowman; consists of necessary clearing and grubbing, 72,939 cu. yds. of common excavation, 260,420 C.Y.H.M. of overhaul, 10,796 cu. yds. of selected material for shoulders, 47,766 cu. yds. of earth type base course (pit material), 229,179 M.S.Y. of scarifying, mixing, 197,747 sq. yds. of bituminous surfacing (inverted penetration type with prime with seal—2 alternates), 20,983 sq. yds. of bituminous surfacing (inverted penetration type without prime with seal (emulsified asphalt method), 3,616 lin. ft. of reinforced concrete pipe culverts, 909 lin. ft. of relaid pipe culverts, 25 tons of riprap, 2 drop inlets (24 by 36 inches), 5 catch basins (Type 1), one manhole complete, 2 manholes to be adjusted, 2 F.A. Markers, 2 F.A. Project No. Plates, 645 lin. ft. of new 39-inch hog wire fence, 240 lin. ft. of new 48-inch hog wire fence, 113 lin. ft. of new 60-inch board fence, 1,038 lin. ft. of new 2-strand barbed wire fence, 4,479 lin. ft. of new 39-inch hog wire fence with one strand of barbed wire, 2,255 lin. ft. of new 39-inch hog wire fence with 2 strands of barbed wire, 25,237 lin. ft. of reset fences and 30 moving items; total length of project 17.805 miles; J. F. Cleckley & Co., Orangeburg, \$202,206;

Richland County—S.C. Dockets Nos. 40,369, 40,377 & 40,379, F.A. Projects Nos. S-506 (2), S-689 (1) & S-675 (1), grading and bituminous surfacing of 1.650 miles on Road 281 from Lykesland southeasterly to Road 223; 4.713 miles on Road 69 from U.S. Route 76 northerly to Route 262, and of 2.255 miles on Road 86 from Road 223 at James Crossing northerly to U.S. Route 76 at Horrel Hill; consists of necessary clearing and grubbing, 48,692

Below—East approach truss, girder and beam spans of the 7,375-foot 6-inch John E. Mathews bridge now being constructed across the St. Johns River at Jacksonville, Fla. Erection of the truss steel has been substantially completed from Pier SE to Pier JE, on which it has just been landed. One falsework bent remains between piers SE and 4E. Consultants to the Florida State Road Department on the project are Parsons, Brickerhoff, Hall & MacDonald, Stanley L. Johnson is resident engineer for that organization. Contractors include George G. Auchter Co., Jacksonville, preliminary substructure contract; Merritt-Chapman & Scott Corp., New York, main substructure contract, and Bethlehem Steel Co., Bethlehem, Pa., superstructure.



cu. yds. of common excavation, 170,538 C.Y.H.M. of overhaul, 5,425 cu. yds. of selected material for shoulders, 20,885 cu. yds. of earth type base course (pit material), 100,343 M.S.Y. of scarifying, mixing, 95,286 sq. yds. of bituminous surfacing (inverted penetration type with seal — 2 alternates), 1,864 lin. ft. of reinforced concrete pipe culverts, 293 lin. ft. of re-laid pipe culverts, 400 lin. ft. of 4-inch tile underdrain, 15 tons of riprap, 4 F.A. Markers, 4 F.A. Project No. Plates, 13,468 lin. ft. of reset fences and 6 moving items; total length of project 8,618 miles; W. M. Reagan & Sons, Inc., Columbia, \$93,986;

Richland County — S.C. Dockets Nos. 40,371 & 40,378, grading and bituminous surfacing of 6,038 miles on Roads 90 (Devereaux Road), 301 & 302 (East and West Buchanan Drive), 303 (McGregor Drive), 293 (Crowson Road), 294 (Buckingham & Datura Roads), 304 (Albion Road), 295 (Kalmia Drive), 305 (Duncan Street), 315 (Heyward Street), 296 (Bonham Road & Airport Blvd.), 297 (Ott Road), and 241 (South Edisto, Commerce, Express and Industrial Drive), being streets in Columbia, and of 2,975 miles on Road 87 from Route 48 near Bethel Church northeasterly to the Lykesland road; consists of necessary clearing and grubbing, 24,472 cu. yds. of common excavation, 330,306 C.Y.H.M. of overhaul, 1,804 cu. yds. of selected material for shoulders, 28,477 cu. yds. of earth type base course (pit material), 136,991 M.S.Y. of scarifying, mixing, 131,703 sq. yds. of bituminous surfacing inverted penetration type with prime with seal (asphalt prime, asphalt cement and cut-back asphalt method) — Alternate No. 1; 131,703 sq. yds. of bituminous surfacing inverted penetration type with prime with seal (asphalt prime and emulsified asphalt method) — Alternate No. 2; 131,703 sq. yds. of bituminous surfacing inverted penetration type without prime with seal (emulsified asphalt method) — Alternate No. 3; one cu. yd. of cement concrete (Class "B"), 1,116 lin. ft. of reinforced concrete pipe culverts, 328 lin. ft. of re-laid pipe culverts, 300 lin. ft. of 4-inch tile underdrain, 2 drop inlets (24 by 36 inches), 7 catch basins (Type 1), 2 catch basins (Type 7) and 1,850 lin. ft. of reset fences; total length of project 9,013 miles; Fox Construction Co., Lexington, \$122,074.

Openings Total \$1,490,802 in Louisiana

Total of the low bids received in July by the Louisiana Highways Department was \$1,490,802 — \$1,378,586 for the July 23 opening and \$112,216 for the early meeting. Included were projects in the following parishes:

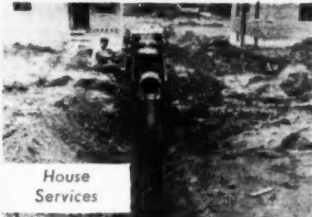
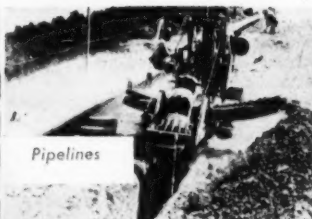
Pointe Coupee — State Project 8-02-10, 7,553 miles grading, widening existing bridges and Portland cement concrete pavement, Erwinville-Livonia Highway, State Route 1500; W. R. Aldrich & Co., Baton Rouge, \$169,493;

Iberia — State Project 4-03-11 and 55-07-10, 2,867 miles grading, drainage structures and widening existing pavement, East Main St. and Center St. in New Iberia, State Route 2 and 25; T. L. James & Co., Inc., Ruston, \$167,911;

(Continued on page 52)



No specialist—but a
**Performance-Proved
EXPERT**
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Equipment... Manufacturers News

Allis-Chalmers Reports on Six Months' Business

Allis-Chalmers Manufacturing Co. announces increased billings of 28 per cent for the first six months of 1952 as compared with the same period a year ago. After provision for federal income taxes of \$28,700,000, this record billing of \$267,141,887 resulted in earnings of \$11,510,307, an increase of eight per cent over the same period in 1951. After preferred dividends of \$485,076, the net earnings for the six months of 1952 are equivalent to \$4.05 per common share on 2,720,743 shares outstanding as compared with \$4 per common share on 2,518,639 shares outstanding at the end of the same period in 1951.

	1952	1951
Net sales billed	\$267,141,887	\$208,199,919
Federal income & excess profits taxes	28,700,000	16,820,000
Net income	11,510,307	10,672,694
Preferred dividends	485,076	383,642
Per common share	4.05	4.00

Billings in the second quarter of 1952 total \$144,042,272. Net earnings for the second quarter of 1952 were \$6,291,733 and after deducting preferred dividends of \$228,879 are equal to \$2.20 a common share. This compares with net earnings of the second quarter of 1951 of \$5,092,939 equal to \$2.30 a common share after preferred dividends.

Orders of the Tractor Division are not booked until billed; however, as of June 30, 1952, unfilled military orders at the Division amounted to \$132,587,321.

Unfilled orders as of June 30, 1952, for the General Machinery Division amounted to \$218,085,585 as compared with \$206,500,566 as of June 30, 1951.

Oliver Tractors Feature Modern Brake Design

Oliver Corporation has announced a new brake design for its industrial wheel tractors. Future Oliver wheel tractors will have new disc brakes already proven through effective use on automobiles and streamlined trains.

These new disc brakes are self-energizing. Light pressure on the pedal will hold equally well forward or backward. Oliver users will have several new advantages from these disc brakes: they can safely hold heavy loads on inclines, make short turns and control the tractor easier, and stop smoothly without grabbing or swerving.

Another added feature of these new Oliver disc brakes is their longer and extreme ease in adjustment.

More Portable Compressors Added by Ingersoll-Rand

Ingersoll-Rand rounds out its line of Gyro-Flo portable compressors with three sizes in addition to its widely acclaimed 600 cfm model. The introduction of 315, 210 and 105 cfm units makes the advantages of the rotary sliding-vane

design available for a wide range of operating requirements. Major benefits claimed by the manufacturer are simplicity and low cost of operation and maintenance, and greater reliability. Smaller dimensions, greatly reduced weight, and discharge temperatures at least 100 degrees lower than conventional portables are other important advantages.

Schild Bantam Offers Job Application Folder

A new illustrated four-page folder featuring on-the-job applications of the truck-mounted Bantam is being issued by the Schild Bantam Co. of Waverly, Iowa. The new folder presents actual job applications and production records of Bantam owners, with illustrations of their machines in operation. The folder illustrates the Bantam which can be used as back hoe, pile driver, clamshell, dragline, shovel, crane, magnet crane and with various grapples. This new booklet is free for the asking through all Schild Bantam distributors or by writing the company's factory in Waverly, Iowa.

New Catalog Describes Buckeye Spreader

A new catalog (Bulletin F-130) describing the many features of the recently introduced Buckeye Model 5 Spreader has been announced by Gar Wood Industries, Inc.

Some of the design and construction features highlighted are the controlled volume and rate of spread. The rate of spread is uniform regardless of the truck speed as the feed roll is powered from the spreader wheels. Feed roll can be adjusted to permit a tapered spread of material.

Built in three sizes the No. 5 Spreader can be used for base course spreads by using a strike-off attachment.

This new catalog, which also lists the complete line of spreader attachments, can be obtained from Buckeye-Gar Wood distributors or Customer Service, Gar Wood Industries, Inc., Wayne Mich. Ask for Bulletin F-130.

Blaw-Knox Changes

Blaw-Knox Division of Blaw-Knox Company has announced the following personnel changes in the construction equipment department.

S. M. Pare, who has held several positions in the department during the past 22 years, has been appointed assistant manager of the construction equipment department. For several years, Mr. Pare has been an assistant to R. P. McKenrick, manager of the department.

Increased business in the steel forms department will require L. J. Sarosdy to devote full time to his position as manager and chief engineer of the steel forms department and to relinquish his

duties as chief engineer of the construction equipment department. He will also serve as engineering consultant on construction equipment.

C. F. Mittelstadt has been promoted from assistant chief engineer to chief engineer of the construction equipment department.

Independent Pneumatic Tool Adds Lightweight Thor Drills

A completely new line of lightweight Thor pneumatic drills, screwdrivers, nut setters and grinders, has been announced by Independent Pneumatic Tool Co., of Aurora, Ill.

With 85 different individual sizes catalogued, ranging in weight from a one-pound one-ounce grinder to a two-pound eleven-ounce angle screwdriver, the new Thor No. 2 class tools feature a new interchangeability of housings, handles and attachments that will facilitate quick delivery of any service in the line.

In addition to parts standardization for ready assembly and low-cost maintenance, the new line features a completely new rotary air motor providing maximum power output at standard air-line pressures.

Thirty-one sizes are featured in the new No. 2 drill line, including angle attachment models in 30°, 45° and 90° along with the straight models, and choice of offset (pistol) grip, button or lever throttle, and optional chuck or collet. Speeds range from 850 R. P. M. to 14,000 R. P. M. for drilling in aluminum, with a total of nine different speeds available.

No. 2 class screwdrivers and nut setters number 48 sizes, 28 of them angle types, in 25° and 90° models. A complete range of direct drive or slip clutch attachments, with offset or lever throttle handles makes up the line. The new "drivers" will handle up to No. 12 wood screws and 1/4 inch machine screws or units.

General Motors Reports

Total dollar sales of all General Motors products in the second quarter of 1952 were higher than in the first quarter, but the total for the two periods was slightly under that for the first six months of 1951. C. E. Wilson, president, and Alfred P. Sloan, Jr., chairman of the board, reported July 30 to 485,000 shareholders.

A substantial increase in defense deliveries in the first half of 1952 did not quite offset the drop in sales of civilian products due to government restrictions on output.

Net sales amounted to \$2,076,000,000 for the second quarter this year and net income was \$142,000,000. GM provided \$307,000,000 during the quarter for United States and foreign income basis of the rates now in effect. Earnings on the common stock for the second quarter of 1952, after reducing dividends on the preferred stocks, were equivalent to \$1.59 per share.

For the first half of 1952, net sales were \$3,869,000,000 and net income

amounted to \$269,000,000. Earnings on the common stock for the first six months of 1952 were equivalent to \$3.01 per share.

What happened to the \$3,880,000,000 GM received in the first half of 1952 from sales and other income is shown by the following table from the report:

48 % or \$1,868,000,000	was paid to suppliers
26½ % or \$1,029,000,000	went to employees for payrolls, etc.
16½ % or \$ 619,000,000	was earmarked for Federal, state & local taxes
1½ % or \$ 65,000,000	was set aside for depreciation
4¼ % or \$ 181,000,000	was distributed to GM shareholders
2¼ % or \$ 88,000,000	was retained in the business

"For each \$1 of net income in the first half of 1952, General Motors set aside \$2.41 for United States and foreign income and excess profits taxes, state and local taxes, and the corporation's share of social security taxes," the report stated. "This does not include the substantial governmental revenues generated by General Motors operations in the form of sales and excise taxes on GM products."

The steel strike did not materially affect GM sales and earnings for the second quarter. This was because the company elected to use up its steel inventories and work in process before curtailing final production. The report added:

"Some departments and plants, however, were forced to shut down in the last few days of the quarter, and by the second week of July production was very substantially curtailed. It will remain so until the flow of steel from the mills is re-established at a high rate and the many pipe lines of supply to steel users are refilled."

Of the total sales in the second quarter of 1952, sales of civilian products amounted to \$1,723,000,000, while deliveries of defense items were \$353,000,000. For the first half of the year civilian sales totaled \$3,190,000,000 and defense deliveries amounted to \$679,000,000.

Fisher Named Vice President of Koppers Division

A. B. Fisher, Jr., of Koppers Co., Inc., has been appointed a vice president in the company's engineering and construction division, it was announced recently at Koppers Pittsburgh headquarters by Joseph Becker, division general manager.

In his new post Mr. Fisher will serve as executive assistant to the general manager and assistant general manager of the division. He will be the principal liaison officer between the division's headquarters in Pittsburgh and the Chicago Headquarters of the Koppers Freyn engineering department.

A mechanical engineering graduate of the University of Maryland, he began his career with Koppers in 1926 as a draftsman. During the following 20-years he worked in various sections of the division's Engineering Department and held the post of Contract Engineer, handling coke plant contracts with Koppers customers throughout the nation.

In 1948 Mr. Fisher was promoted to Chief Engineer of the Engineering and Construction Division and in September, 1951, assumed the post of Operating Man-

ager of the Freyn Engineering Department of Koppers.

He is a member of the American Institute of Mining and Metallurgical Engineers; Association of Iron and Steel Engineers; Blast Furnace and Coke Oven Association; Professional Engineers Society of Pittsburgh and the Western Society of Engineers.

New Side Dump Bodies Announced by Galion

A new line of side dump truck bodies for heavy duty applications is announced by Galion Allsteel Body Co., Galion, Ohio.

Known by the name "Roll-Over," the bodies are available in various sizes and capacities.

Mechanical in operation, Galion Roll-Overs dump to either right or left side, as desired. Bodies are of 10 gauge steel, can be mounted on all standard trailers, and will withstand the most severe service. The self-contained subframe consists of three heavy box type outrigger cross members. Front and rear outriggers are built with a series of gear-like teeth which roll inside the formed channel tracks welded to the body.

Main locking mechanism is a down-pull spring-loaded type plunger pin which engages in a socket built into an angle welded to the head of the body. Lock pin is actuated by a lever mounted to an A-type frame welded to the front of the subframe. Lever can be operated from either side of body.

Telsmith Makes Changes in Engineer Department

The Smith Engineering Works, 532 E. Capitol Drive, Milwaukee 12, Wis., manufacturer of Telsmith equipment for mines, quarries, gravel pits and contractors announces changes in its engineering department. Alexander Lorn Munro, who has been chief engineer for a great many years, has been advanced to director of engineering. Elmer E. Kraig, formerly assistant chief engineer, has been advanced to the position of chief engineer.

Knickerbocker Announces Trailer Type Concrete Mixer

Increased horsepower and several other new features have been incorporated in the 1953 Model 6-SE Trailer type concrete mixer, announced Knickerbocker Co., Jackson, Mich.

The newly designed, end-discharge, one-bag model now uses a two-cylinder air-cooled engine developing 10 horsepower at 2,000 rpm, compared to eight horsepower for the single cylinder engine used on the old model.

Framing Anchors Urged as Joist Hangers

Instructions on the use of Trip-L-Grip framing anchors as joist hangers are detailed in a new folder being distributed to architects and home builders by Timber Engineering Co., affiliate of National Lumber Manufacturers' Assoc.

Although the anchors are designed for all secondary connections in wood frame construction, they are said to have their largest use as joist hangers.

New Bulletin Ready on Barber-Greene Mixall

Barber-Greene Co., Aurora, Ill., manufacturer of roadbuilding equipment and material handling machinery, has released an eight-page, two-color bulletin on its new "Mixall," portable, one-unit, dryer-mixer.

Describing the Mixall as the answer to the urgent need for quality hot patch material, the bulletin briefly outlines the reasoning behind the design and development of the new machine. The Mixall was designed to prepare and mix material for patching breaks and failures in both bi-



tuminous and concrete roads and streets.

Pointing out that for the first time street and highway departments have available an easily portable machine for on-the-spot production of the same high-type mix used in the original pavement, the booklet graphically demonstrates the Mixall's operation.

Typical operating capacities are presented along with a discussion of the design considerations behind the Mixall's development. For instance, on page three, the bulletin states "... capacity is largely determined by the physical ability of the crew to provide it with aggregate and their ability to dispose of the mixed material."

In addition to design considerations, the folder goes briefly into the "principle" aspects of the Mixall. The discussion on the value of complete drying and thorough mixing—exclusive Mixall advantages—is to-the-point and substantiated.

Design and operating features, such as grouped controls, low 14-inch loading height, and all-welded channel steel frame are pictured and described. Condensed specifications are included on the component page. Elsewhere in the booklet is shown the high-discharge feature that makes charging a wheelbarrow easy.

The Mixall bulletin brings out several allied usages for the equipment that should be of interest to contractors. It is claimed that the Mixall produces Portland concrete mixes of even lower slump than conventional mixers. It is pointed out that the machine can be effectively used in thawing as well as drying and heating frozen aggregates, also in thawing abrasives for winter-skid control. Mortars and thawing would appear to be a natural for the Mixall.

Copies of the Mixall Bulletin 804 are available from Barber-Greene distributors or direct from Barber-Greene Co., Aurora, Ill.

(More on page 50)

Equipment... Manufacturers News

Ellicott Delivers Dredge for India Operation



One of the most modern hydraulic pipe-line dredges afloat was turned over to the Republic of Indonesia by Ellicott Machine Corp., Baltimore, Maryland, dredge designers and builders. Named the "Musi," the new dredge boasts a rated output of 650 cubic yards of solid material per hour at a maximum dredging depth of 39.4 feet below water. The Musi's first assignment has to do with the current harbor improvement project being carried out by the Government of Indonesia.

The new dredge is equipped for 24-hour operation. A crew of 32 men, working in three shifts, can be easily accommodated for an indefinite period. Complete living quarters, including a modern galley, two mess halls, Worthington refrigerating equipment for food storage and a recreation room help provide for such continuous operation.

Inside diameters of the Musi's suction pipe and discharge pipe are 24 inches and 22 inches, respectively. Two identical pumping units, each consisting of a Worthington diesel engine of 1320 horsepower directly connected to a 24-inch suction 22-inch discharge dredging pump, together have a rated output of 650 cubic yards of solid material per hour.

Pumps are arranged, and piping is provided, so that they may be used in a series for long pipe line operations, or individually for shorter operations. In addition, provision has been made to operate the two pumps in parallel where a very high output of light material is required through a comparatively short pipe line. Auxiliaries are electric motor driven, current being supplied by a Worthington diesel driven electric generating system of approximately 500-kilowatt rating. This brings total horsepower of the dredge to approximately 3,500. The three Worthington diesel engines use exhaust turbo-chargers for conservation of fuel, weight and space.

Allis-Chalmers Announces Norwood Works Expansion

Allis-Chalmers Manufacturing Co. has purchased the plant of Victor Electric Products, Inc. in Cincinnati, Ohio, according to an announcement by J. L. Singleton, vice-president in charge of the firm's general machinery division.

Mr. Singleton said that purchase of the plant fills a long-felt need for additional space and shipping facilities for Texpore drive equipment. Within the next few months all Texpore sales, engineering and production facilities will move into

the new plant from West Allis. The newly acquired plant, two blocks east of Norwood Works No. 1, contains offices, cafeteria, manufacturing, warehouse and shipping facilities in its 127,000 square feet of floor space.

With this move, office and production facilities of all of the Allis-Chalmers Apparatus Division will be consolidated in two modern plants under J. D. Greenward, General Manager, Norwood Works. This includes small and medium size motors and pumps, and Texpore drives and transmission equipment.

Data Card Issued on Carbon Steel Tube

Technical information of value to engineers and designers associated with the fabrication of equipment operating at elevated temperatures and pressures is presented in a new data card published by The Babcock & Wilcox Co., tubular products division. Known as TDC 142, the bulletin offers condensed data on mechanical and physical properties, upsetting, swaging, flanging, expanding, bending and welding of seamless and welded carbon steel tubing. Copies of the bulletin are available free on request to the general offices of the division at Beaver Falls, Penn.

Entraining Agent Described

A new folder describing the use of Vinsol air-entraining agent in concrete is available from Hercules Powder Co., Wilmington, Del.

The folder briefly lists the advantages of air-entrained concrete and the methods employed in its production.

Use of neutralized Vinsol solution is covered in a series of questions and answers. The leaflet points out that although Hercules does not supply solutions of neutralized Vinsol, these solutions can be obtained from numerous companies.

A.-C. Announces New "Magic-Grip" Sheave

A new type of "Magic-Grip" bushing has been announced by Allis-Chalmers Manufacturing Co. for its stationary-control, wide-range "Vari-Pitch" sheave. The new bushing makes possible quick and easy installation or removal of the sheave and permits mounting it on the shaft so that the adjusting control mechanism is either toward the motor bearing away from it.

The new type "Magic-Grip" bushing as used in the "Vari-Pitch" sheave consists of two split-tapered sheaves, one within the other. When drawn together with the locking screw, the bushing sleeve is contracted on the shaft and the outer sheave sleeve is expanded against the discs simultaneously to effectively lock the entire mechanism with all working clearances eliminated.

All torque is transmitted by keys in the two sleeves so that stresses due to start-

ing, stopping or sudden overloads will not affect the sheave setting in any way. Spacing of the discs to produce different pitch diameters is accomplished with the adjusting screw while the locking screw is in loosened position.

Design of the new "Magic-Grip" bushing which permits the sheave to be installed on the motor shaft with the adjusting screws either away from or toward the motor bearing is an exclusive feature. There is a decided advantage in being able to control the sheave from the motor bearing side, particularly on textile machinery and other machines where low hanging frames or close quarters make it difficult to use the conventional type sheave which must be adjusted at the outer end. The controlling mechanism can now be located where it will be the most convenient and easiest to get at on any drive.

The new "Vari-Pitch" sheave is approximately 20 percent lighter than the former wide-range, stationary-control, straight-bore "Vari-Pitch" sheave. This means less weight on motor bearings and makes the sheave easier to handle.

A new four-page leaflet giving dimensions and engineering information on wide-range, stationary-control "Vari-Pitch" sheaves equipped with a new type "Magic-Grip" bushing for use with "Q" or "R" section belts has been released by the company.

New Moto-Mixer Bulletin

The new Rex Adjusta-Wate Moto-Mixer (truck mixer) Bulletin, No. 52-32, is pictorially described in detail and is now being released by Chain Belt Co. of Milwaukee 1, Wisconsin.

This bulletin describes how effectively maximum legal payloads and complete flexibility in ready-mix operations can be obtained. The "Hidden Treasure" feature, the most valuable legal payload space on a truck is located directly behind the truck cab, and shows what its uses mean to mixer owners and operators.

A wide variety of Rex Adjusta-Wate Moto-Mixer options are effectively introduced, along with a two-page spread on quality features, from the chain drum drive to the fast discharging action.

U. S. Steel Declares \$1.75 Quarterly Dividend

Benjamin F. Fairless, chairman of the board of United States Steel Corp., announced last month that the directors had declared the quarterly dividend of \$1.75 per share on the preferred stock, payable August 20, 1952, to stockholders of record at close of business on August 5, 1952, and a dividend of 75 cents per share on the common stock, payable September 10, 1952, to stockholders of record at close of business on August 8, 1952.

Complete cessation of the major part of U. S. Steel's operations because of the steel strike has prevented the accumula-

tion of financial and statistical data usually reported at this time. Such information will be released as soon as it can be developed.

The steel strike began June 2, 1952, and was terminated on July 26, 1952, on the basis of a settlement with the United Steelworkers of America (CIO) providing for a wage rate increase averaging 16 cents per hour retroactive to March 1; six paid holidays and double time for holidays worked; increase in shift differentials from four and six cents to six and nine cents per hour; three weeks paid vacation after fifteen years service; a decrease in the Southern differential by five cents per hour, and an immediate decrease in ore mine differentials with full elimination of the differentials at the end of one year.

The new labor agreements run to June 30, 1954, reopenable by either party as of June 30, 1953, on the subject of a general adjustment of wage rates only.

The union's demand for compulsory membership was the major contributing factor to the long extension of the strike.

U. S. Steel believed that to grant this demand would have destroyed a basic American freedom. U. S. Steel believes that every employee has the right to decide for himself whether or not to become or remain a member of a union.

Under the terms of the new agreement, no employee is required to join the union in order to hold his job. A new employee, when hired, will sign an application card which does not become effective for 30 days, and will not become effective at all if it is revoked by the new employee at his option during the last 15 days of the 30-day period following employment. For employees who are union members there is a withdrawal privilege giving them the right to drop their membership during the last 15 days of the new contract. Present employees, not members, do not have to join the union.

The increase in employment costs to U. S. Steel as a result of this settlement is estimated at more than \$150,000,000 per year at full operations. In the past, as rounds of wage increases have spread to other industries, increases have resulted in U. S. Steel's costs of products and services bought approximately equal to the increase in employment costs. If past experience prevails this time the added cost of purchased products and services will be equal to the employment cost increase.

Rust Promotes Three

D. C. Shaw, III, formerly assistant secretary, has been promoted to secretary of the Rust Engineering Co., according to an announcement of President S. M. Rust, Jr.

The announcement also included the promotions of John W. Clark to assistant secretary of Rust in Birmingham, Alabama, and A. J. Jacobs to assistant secretary of the company in Pittsburgh.

Mr. Shaw joined Rust's tax and legal department in 1941 after being admitted to the Bar in Allegheny County, and was named assistant secretary in 1946 shortly after his return from three and one-half years' service with the AAF in World War II. He is a graduate of Wash-

ington and Jefferson College and the University of Michigan Law School.

Mr. Clark, a veteran of ten years' service with Rust, also joined the company's tax and legal department in Pittsburgh and was later made office manager of projects in the field. In 1950 he was transferred to the Birmingham office where he was assistant purchasing agent. He is a graduate of the University of Pittsburgh.


Mr. Jacobs, now assistant secretary of the company in Pittsburgh, joined the tax and legal department in 1951. He is a graduate of St. Thomas College (Denver), attended St. Louis University's Law School, and the University of Denver College of Law where he received

his law degree, being admitted to the Bar in Denver. He is a World War II veteran and also served in Korea.

Blaw-Knox Divs. Combined Under Black

Blaw-Knox Company announces that its power piping and sprinkler divisions have been combined with Duncan A. Black in charge.

Mr. Black joined the Power Piping Company in 1926 as piping engineer and continued with the organization when it became part of Blaw-Knox in 1937. Since the beginning of 1949 he has been vice president of the Blaw-Knox Construction Co., a subsidiary, and assistant manager of the power piping division.



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New Legal Guide for Contractors

Legal Guide for Contractors, Architects and Engineers, a new book by I. Vernon Werbin, discusses 83 cases of contract litigation and gives sound advice for minimizing these legal headaches. It is being published in August by the McGraw-Hill Book Co. The author is both a licensed professional engineer and a practicing lawyer. Out of this unique experience he explains the rights in litigation of contractors, architects and engineers, and tells what steps must be taken to preserve these rights. He not only shows how to deal with specific types of legal problems when they do occur, but also specifies how to prepare contracts that won't cause trouble.

Prior to writing the book, Mr. Werbin thoroughly researched all reported cases involving construction, engineering and architectural contracts handed down by every court in the United States. Pertinent contract provisions, the court's decision, and the basis for the decision are given for each of the 83 cases selected for this practical book. For this reason, the book, though written for laymen, is equally valuable to lawyers who handle engineering and construction litigation, since each principle of law set forth is sustained by a case citation. A detailed index of every subject covered completes the book.

Much of the author's 35 years of law practice has been in contract litigation. After 17 years' work as an engineer, mostly in connection with New York City's subways, he was admitted to the Bar in 1917, and at that time became counsel for the Bradley Contracting Co.

Price of Werbin's *Legal Guide for Contractors, Architects and Engineers* is \$4.75. McGraw-Hill's Book Information Service, 327 W. 41st St., New York 36, N. Y., will supply further details.

Allis-Chalmers Negotiates for LaPlant-Choate

Negotiations are underway for the acquisition of the LaPlant-Choate Manufacturing Co., Inc., Cedar Rapids, Iowa, by the Allis-Chalmers Manufacturing Co., according to an announcement by A. D. Dennis, president of the Iowa firm.

In a letter sent Friday, July 18, to all stockholders of the LaPlant-Choate company, Mr. Dennis and Roy E. Choate, chairman of the Iowa firm's board of directors said that "direct negotiations are being conducted with the Allis-Chalmers Manufacturing Co. of Milwaukee, Wis."

The letter said the negotiations were "looking toward the acquisition by Allis-Chalmers of the plant and assets of LaPlant-Choate Manufacturing Company, Inc., or some arrangement for an exchange of stock, merger, or consolidation."

Allis-Chalmers officials in Milwaukee said the Iowa firm manufactures five sizes of earth-moving equipment. They said that seven buildings totaling 270,000 square feet and located on an 18-acre parcel of land, comprises the plant

proper. The Iowa company normally employs between 800 and 900 people.

Purchase of the Cedar Rapids earth-moving equipment company would augment the Allis-Chalmers tractor division's line of industrial equipment according to Allis-Chalmers officials.

Allis-Chalmers now manufactures a complete line of crawler tractors and motor graders at its Springfield, Ill., Works.

Pioneer Designs Light Jaw Crusher

A new 10-inch by 16-inch plain bearing jaw crusher has been designed by Pioneer Engineering Works, Minneapolis. The new crusher features a single wall pressed steel base that is strong and rigid, and yet lighter in weight.

New Portable Saw

A new, heavy-duty 6-inch portable electric saw at a popular price is now being offered by Skilsaw, Inc., portable electric tool manufacturer. The new Skil Homebuilders' 6-inch saw has been designated Model 686 and introduces a new line of heavy-duty, professional-type Skil tools at new low prices.

Byers Appoints Clay

Appointment of Richard H. Clay as manager of the engineering service department has been announced by A. M. Byers Co. A graduate in mechanical engineering of Auburn, in 1948, Mr. Clay has been associated with the Byers Company for the past two years.

Openings Total \$1,490,802 in Louisiana

(Continued from page 47)

West Baton Rouge and Pointe Coupee—State Project 8-01-13 and 8-02-11, 10,001 miles bituminous binder course and existing pavement slab; Barber Brothers Co., Baton Rouge, \$123,670;

Vermilion—State Project 207-01-10, 7,765 miles shell surfacing, Pecan Island-Forked Island Highway, State Route 26; Pankey Wheat, Oakdale, \$75,603;

Vermilion—State Project 207-01-09, 8,510 miles shell surfacing, Pecan Island-Forked Island Highway, State Route 26; Pankey Wheat, Oakdale, \$70,533;

Calcasieu, Cameron, Terrebonne and St. Landry—State Project 737-00-50, repainting steel ferry barges; Harms & Smalhall Shipyard, Inc., Orange, Texas, \$27,390;

East Baton Rouge—State Project 60-01-05, .006 mile reinforced concrete box culvert, reinforced concrete culvert pipe and Portland cement concrete pavement, Baton Rouge-Clinton Highway, State Route 36; Forcum-James Co., Baton Rouge, \$15,414;

Grant and Rapides—State Project 151-02-13, repairs to Red River bridge at Boyce, State Route 144; Forcum-James Co., Baton Rouge, \$145,840;

East Feliciana—State Project 252-4-07, spot-dumped gravel on Kellers Crossing-Wilson Highway, State Route 311; Feliciana Sand & Gravel Co., Jackson, \$11,212;

St. Tammany—State Project 30-01-08, spot-dumped base course gravel, Covington-

ton-Bush Highway, State Route 7; C. & B. Gravel Co., DeRidder, \$10,673;

St. Tammany—State Project 58-01-06, spot-dumped base course gravel on Pearl River-Tallisheek Highway, State Route 58; W. R. Core, Glenmora, \$8,397;

Tangipahoa—State Project 853-34-02, spot-dumped washed gravel, Little River-Independence Highway; Watson Sand & Gravel Co., Fluker, \$6,461;

Vernon—State Project 703-09-70, Ctr. 2, 4.5 miles washed gravel surface course; Richard Coco, Marksville, \$5,568;

St. Tammany—State Project 13-13-07, spot-dumped base course gravel, Slidell-Perlington Highway, State Route 1075; Kivett & Reel, Inc., Sun, \$5,343;

West Baton Rouge—Control Unit 8-01, spot-dumped surface course and sand/clay gravel, near Westover; Paul A. Lambert, Simmesport, \$3,157;

St. Tammany—State Project 58-02-05, spot-dumped base course gravel, Tallisheek-Bush Highway, State Route 484; W. R. Core, Glenmora, \$1,915;

Franklin—State Project 165-03-05, Part 2, spot-dumped base course gravel, Fort Necessity-Extension Highway, State Rte. 169; Forcum-James Co., Baton Rouge, \$35,591;

Cameron—State Project 703-09-81, clamshell and local shell; W. T. Burton, Sulphur, \$10,105;

Natchitoches—State Project 835-09-02, etc., .020 of a mile of corrugated metal pipe arches and reinforced concrete pipe culverts, State Routes 606-D, 1, 10, 10-D and 1501; Normand Brothers, Marksville, \$13,921;

Morehouse—State Project 162-01-07, spot-dumped base course gravel, Wham-Collinston Highway; Forcum-James Co., Baton Rouge, \$52,598.

Kentucky Bids Received

(Continued from page 41)

surface, Class 1, Kelly Contracting Co., Louisville, \$152,926;

Butler—SP 16-16, 6.7 miles bituminous surface, Class C-1, Ferguson & Milliken Paving Co., Franklin, \$49,738;

Christian—SP (24-165) (24-405) (24-625), 15.138 miles bituminous surface, Class C-1, Robert M. Robinson, Owensboro, \$107,490;

Livingston-Crittenden—SP(70-70) (28-126), 17.981 miles rock asphalt surface, R. E. Gaddie, Inc., Bowling Green, \$80,306;

Daviess-McLean—SP (30-137) (75-22), 6.4 miles bituminous surface, Class F, State Contracting & Stone Co., Inc., Hartford, \$45,405;

Fulton—SP 38-227, 4.85 miles bituminous surface, Class C-1, R. B. Tyler Co., Louisville, \$53,781;

Graves—SP (42-168) (42-188), 10.43 miles bituminous surface, Class C-1, R. B. Tyler Co., Louisville, \$103,454;

Hancock—SP 46-37, 7.132 miles bituminous surface, Class 1, limestone aggregate, State Contracting & Stone Co., Hartford, \$66,801;

Harlan-Letcher—SP (48-388) (67-319), 4.3 miles 3 inch bituminous macadam surface, H. C. Adams Contractors, Lexington, \$61,303;

Hopkins—SP (54-100) (54-60), 9.1 miles bituminous surface, Class F, Corum &

Edwards, Inc., Madisonville, \$74,561;

Larue—SP 62-301, 1,604 miles bituminous macadam surface, R. B. Tyler Co., Louisville, \$17,818;

Magoffin—SP 77-60, 6.5 miles bituminous surface, Class C-1, limestone aggregate, Kentucky Road Oiling Co., Frankfort, \$59,772;

Marshall—SP 79-413, 5.5 miles bituminous surface, Class C-1, McDade & McDade, Fulton, \$49,046;

Montgomery—SP 87-77, 4.00 miles bituminous surface, Class C-1, A. W. Walker & Son, Mount Sterling, \$34,529;

Pike—SP (98-123) (98-623), 7,953 miles bituminous surface, Class C-1, Franklin Construction Co., Frankfort, \$68,200;

Pike—SP 98-263, 6.9 miles 3 inch bituminous macadam surface, Curtis Cantrill, Middlesboro, \$99,784;

Russell—SP 104-398, 4.05 miles 3 inch bituminous macadam surface, R. E. Gaddie, Inc., Bowling Green, \$48,630;

Trigg—SP 111-194, 6.252 miles bituminous surface, Class F, Corum & Edwards, Inc., Madisonville, \$47,605;

Union—SP 113-487, 4.7 miles bituminous surface, Class C-1, Robert M. Robinson, Owensboro, \$35,040;

Webster—SP (117-369) (117-549), 13,393 miles bituminous surface, Class C-1, Ellis, Kelly & Co., Owensboro, \$104,960;

Ohio—MP Group 5 (1952), 7,209 miles rock asphalt seal, Ellis, Kelly & Co., Owensboro, \$14,958;

Carter—MP Group 204 (1952), 18,416 miles pulling ditches, Sam Nally Co., Bardstown, \$4,604;

Greenup—MP Group 205 (1952), 16,160 miles pulling ditches, Sam Nally Co., Bardstown, \$4,201;

Adair—RS (1-410) (1-490), 2,226 miles reconstruction and traffic bound limestone, Spickard & McClure Construction Co., Jamestown, \$45,867;

Adair—RS 1-490, 2,739 miles reconstruction and traffic bound limestone, G. & R. Coal Co., Robbins, \$18,894;

Adair—Combination RS 1-410 and RS 1-490, 4,965 miles reconstruction and traffic bound limestone, W. M. Hooper, Caneyville, \$62,984;

Anderson—RS 3-331, 2,902 miles reconstruction and traffic bound limestone, R. B. Tyler Company, Louisville, \$35,419;

Barren—RS (5-412) (5-672), 1,077 miles reconstruction and traffic bound limestone, T. C. Pitman, Hodgenville, \$30,720;

Barren—RS 5-672 5,293 miles reconstruction and traffic bound limestone, Lyons & Breeden, Rogersville, \$38,284;

Barren—Combined RS 5-412 and RS 5-672, 6,370 miles reconstruction and traffic bound limestone, Lyons & Breeden, Rogersville, Tenn., \$69,082;

Clark—RS (25-142) (250342), 7,861 miles bituminous surface, Class C-1, H. K. Williams, Louisville, \$39,850;

Elliott—RS 32-209, 3,058 miles reconstruction and traffic bound limestone, Licking River Limestone Co., West Liberty, \$35,743;

Garrard-Madison—RS 40-226; RS 76-491, 3,025 miles reconstruction and traffic bound limestone, R. B. Tyler Co., Louisville, \$53,352;

Graves—RS 42-808, 0.710 mile bridges and local bank or creek gravel, Ford-

Guhy Construction Co., Bardwell, \$47,108;

Grayson—RS 43-515, 2,762 miles reconstruction and traffic bound limestone, R. B. Tyler Company, Louisville, \$47,619;

Harlan—RS 48-18, repairs to suspension bridge, C. D. Juett, Winchester, \$24,949;

Laurel—RS (63-101) (63-751), 1,628 miles reconstruction and traffic bound limestone, Greer Brothers & Young, London, \$30,014;

Laurel—RS 63-751, 3.56 miles reconstruction and traffic bound limestone, Greer Brothers & Young, London, \$39,596;

Laurel—Combination RS (63-101) (63-751), 5,188 miles reconstruction and traffic bound limestone, Greer Brothers & Young, London, \$66,362;

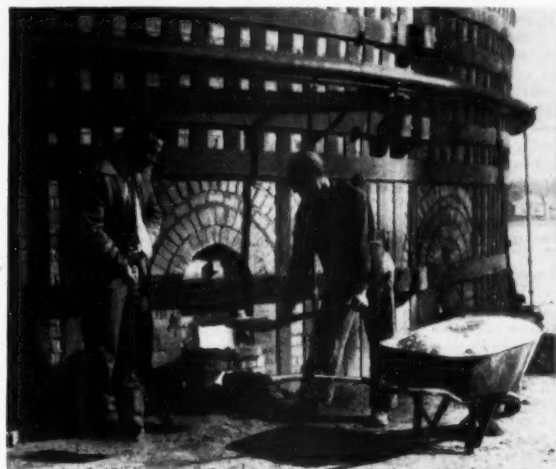
McCreary—RS 74-253, 3,992 miles reconstruction and traffic bound limestone, Greer Brothers & Young, London, \$83,142;

Montgomery & Powell—RS 87-337, RS 99-280, 3,316 miles reconstruction and traffic bound limestone, Licking River Limestone Co., West Liberty, \$60,470;

Trimble-Carroll—RS 112-158, RS 21-272, 7,353 miles reconstruction and traffic bound river gravel, Sam Nally & Company, Bardstown, \$165,697;

Warren—RS 114-588, 9,336 miles reconstruction and traffic bound limestone, J. W. Willard, Bowling Green, \$53,417;

Lewis—MP Group 206 (1952), 18,426 miles pulling ditches, Sam Nally Company, Bardstown, \$4,606.



Salt is thrown on the kiln fires; sodium vapors combine with the white-hot pipe to form a surface of pure glass.

Why Dickey sanitary clay pipe is fully salt-glazed

Important to every length of Dickey clay pipe is its all over salt glaze. This type of glaze is not a coating, but a change in the chemical nature of the pipe surface itself. A hard-wearing surface of heavy glass is created—brighter, smoother, and self-scouring. A pipe can be salt-glazed only after complete vitrification; it is visual proof to you of an exceptionally hard-burned product. Specify Dickey sanitary clay pipe; it is fully vitrified and salt-glazed.

**Dickey Sanitary
Salt-Glazed Clay Pipe**
EXCEEDS STANDARD
SPECIFICATIONS

If it's made of clay it's good...
if it's made by Dickey it's better

**W. S. DICKEY
CLAY MFG. CO.**

Birmingham, Ala., Chattanooga, Tenn.,
Kansas City, Mo., San Antonio, Tex.,
Topeka, Kan., Tex.-Ark.

South's Awards More Than Double in July

(Continued from page 21)

per cent when compared with July a year ago.

Defense construction remained at high levels, the two federal agencies estimated. Highway construction, however, was described as rising less than usual for this time of the year "because of spotty cutbacks in activity due to scarce supplies of steel. The dollar volume for such work was put at twelve per cent over the comparable month of last year. Total for public expenditures for new construction was set at \$1,100,000,000.

New construction expenditures in the first seven months are estimated by the federal bureaus at \$18,000,000,000, or about five per cent above the total for the comparable period of 1951. A slightly lower volume of private outlays was reported as "more than off-set by a twenty-four per cent increase in the level of public expenditures. The 1952 total was described as twice as great as that for public work, or \$12,000,000,000 as compared with \$6,000,000,000.

Expenditures in the January-July period were down by six per cent for private residential construction and by over one-third for commercial building. Factory building and privately financed public utilities showed substantial gains. Federal spending was the most important factor in boosting public expenditures. Highway, school and conservation and development projects were reported somewhat above year-ago levels, but sewer and water outlays were off eight per cent.

Settlement of the fifty-three day steel strike occupied the spotlight as the month of July drew to its close. The prospect of increased prices immediately faces the construction industry. To most contractors, the dispute has also meant a further delay in addition to those already encountered under federal restrictions prior to the walk-out.

Many contractors will be in the same situation as the holder of a large waterfront improvement project. Steel piling was scheduled for delivery after long delay due to the federal regulations. The strike threw the plan entirely out of kilter. Now, the best information is that the new delivery date will be the length of the strike plus three to five weeks.

Substantiating reports on impending delays, Arthur V. Wiebel, president of Tennessee Coal and Iron Division of United States Steel, says "the long steel strike has created burdens and uncertainties which may prolong full resumption far beyond the customary time heretofore required after briefer T. C. I. shutdowns.

"Our operating management people now estimate that it may take us from four to five weeks to reach the rate of 104.5 per cent of capacity operations at which we produced steel the week prior to the beginning of the strike on June 2."

When the strike began, T. C. I. banked eight of its nine blast furnaces. The ninth

was undergoing extensive repairs. A week will be required for completion of the work and the blowing-in process. After a long period of banking, blast furnaces must be handled with utmost care in restoring them to production.

Mr. Wiebel points out that three of the furnaces have been requiring an unusual amount of coke during the banked period and he does not "know what this may portend." The first step will be to

(Continued on page 56)

SOUTH'S CONSTRUCTION BY TYPES

	July, 1952 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Seven Months 1952	Contracts Awarded First Seven Months 1951
PRIVATE BUILDING				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$8,502,000	\$11,601,000	\$49,675,000	\$46,350,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	2,730,000	12,639,000	28,112,000	36,270,000
Residential (Apartments, Hotels, Dwellings)	24,500,000	32,536,000	388,467,000	571,154,000
Office	4,703,000	11,300,000	23,291,000	38,859,000
	\$40,435,000	\$66,076,000	\$489,543,000	\$692,631,000
INDUSTRIAL	\$1,121,413,000	\$423,733,000	\$1,982,784,000	\$1,978,271,000
PUBLIC BUILDING				
City, County, State, Federal and Hospitals	\$139,200,000	\$77,303,000	\$460,267,000	\$267,818,000
Schools	26,401,000	66,544,000	189,160,000	244,385,000
	\$165,601,000	\$143,847,000	\$649,427,000	\$512,203,000
ENGINEERING				
Dams, Drainage, Earthwork, Air- ports	\$71,144,000	\$110,298,000	\$325,951,000	\$461,672,000
Federal, County, Municipal Elec- tric	16,614,000	169,347,000	51,106,000	31,149,000
Sewers and Waterworks	10,737,000	53,394,000	75,636,000	88,014,000
	\$98,515,000	\$333,039,000	\$452,693,000	\$580,835,000
ROADS, STREETS, BRIDGES	\$92,177,000	\$149,183,000	\$406,957,000	\$338,893,000
TOTAL	\$1,518,141,000	\$1,117,878,000	\$3,981,406,000	\$4,102,835,000

SOUTH'S CONSTRUCTION BY STATES

	July, 1952 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Seven Months 1952	Contracts Awarded First Seven Months 1951
Alabama	\$19,976,000	\$62,032,000	\$191,045,000	\$215,103,000
Arkansas	6,943,000	3,892,000	31,003,000	132,072,000
District of Columbia	4,392,000	52,477,000	33,652,000	20,456,000
Florida	52,806,000	30,630,000	310,058,000	302,867,000
Georgia	43,991,000	18,889,000	196,637,000	126,737,000
Kentucky	407,359,000	11,493,000	328,676,000	424,525,000
Louisiana	55,373,000	40,255,000	329,009,000	310,000,000
Maryland	29,325,000	159,732,000	237,238,000	278,534,000
Mississippi	12,120,000	10,822,000	76,331,000	121,540,000
Missouri	11,405,000	21,884,000	61,706,000	127,771,000
North Carolina	30,438,000	25,790,000	175,000,000	236,343,000
Oklahoma	20,581,000	48,773,000	105,276,000	54,219,000
South Carolina	28,587,000	15,977,000	132,688,000	463,962,000
Tennessee	501,502,000	189,840,000	618,877,000	154,986,000
Texas	171,296,000	383,915,000	686,065,000	839,202,000
Virginia	29,367,000	35,632,000	185,464,000	229,349,000
West Virginia	12,136,000	5,845,000	61,473,000	44,791,000
TOTAL	\$1,518,141,000	\$1,117,878,000	\$3,981,406,000	\$4,102,835,000

INDUSTRIAL

	July, 1952 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Seven Months 1952
Ala.	\$2,070,000	\$2,217,000	\$105,072,000
Ark.	11,000	29,000,000	11,950,000
D. C.	915,000	3,875,000	9,414,000
Fla.	1,276,000	13,874,000	38,435,000
Ky.	459,000,000	383,000	28,312,000
La.	35,022,000	30,000	41,000,000
Mo.	621,000	11,903,000	68,054,000
Miss.	9,364,000	3,750,000	43,619,000
Mo.	300,000	820,000	5,894,000
N. C.	32,177,000	2,005,000	68,075,000
Okl.	332,000	1,451,000	4,605,000
S. C.	468,239,000	26,135,000	493,860,000
Tenn.	111,333,000	269,538,000	246,332,000
Tex.	780,000	23,747,000	18,564,000
W. Va.		2,985,000	27,431,000
TOTAL	\$1,121,413,000	\$423,733,000	\$1,982,784,000

ROADS, STREETS, BRIDGES

	July, 1952 Contracts Awarded	Contracts to be Awarded	Contracts Awarded First Seven Months 1952
Ala.	\$4,615,000	\$51,840,000	\$12,810,000
Ark.	3,987,000	2,070,000	14,038,000
D. C.	1,538,000	7,500,000	1,660,000
Fla.	12,536,000	11,960,000	35,154,000
Ga.	16,811,000		28,930,000
Ky.	6,085,000	5,720,000	29,405,000
La.	1,903,000	31,400,000	36,717,000
Mo.	5,692,000	11,840,000	22,167,000
Miss.	306,000	1,200,000	5,824,000
Mo.	3,189,000	2,517,000	30,004,000
N. C.	1,903,000	7,500,000	23,677,000
Okl.	4,605,000	2,280,000	27,354,000
S. C.	4,736,000	1,500,000	16,579,000
Tenn.	6,203,000	2,730,000	16,231,000
Tex.	10,401,000	4,495,000	86,675,000
W. Va.	3,588,000	1,740,000	10,185,000
TOTAL	\$92,177,000	\$149,183,000	\$406,957,000



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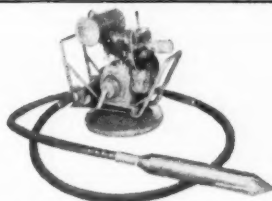
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PUBLIC BUILDING

(City, County, State, Federal; Hospitals)	July, 1952		Contracts First Seven Months to be Awarded	
	Contracts Awarded	to be Awarded	1952	1952
Ala.	\$6,888,000	\$5,230,000	\$25,393,000	
Ark.	258,000	55,000	19,401,000	
D. C.	1,669,000	6,531,000	15,756,000	
Fla.	10,067,000	2,517,000	33,189,000	
Ga.	19,221,000	2,635,000	52,315,000	
Ky.	1,768,000	4,340,000	21,058,000	
La.	10,503,000	4,180,000	33,733,000	
Md.	13,555,000	41,214,000	77,969,000	
Miss.	1,328,000	2,797,000	15,764,000	
Mo.	2,776,000	979,000	12,556,000	
N. C.	9,105,000	13,415,000	44,172,000	
Okla.	9,895,000	235,000	22,655,000	
S. C.	11,158,000	1,813,000	31,759,000	
Tenn.	22,904,000	7,050,000	46,636,000	
Tex.	15,907,000	43,179,000	118,729,000	
Va.	20,856,000	6,575,000	68,398,000	
W. Va.	8,548,000	1,120,000	9,123,000	
TOTAL	\$165,601,000	\$143,847,000	\$649,427,000	

PUBLIC ENGINEERING

(Dams, Drainage, Waterworks, Sewers, etc.)	July, 1952		Contracts First Seven Months to be Awarded	
	Contracts Awarded	to be Awarded	1952	1952
Ala.	\$1,993,000	\$890,000	\$6,388,000	
Ark.	698,000	1,757,000	5,371,000	
D. C.	111,000	18,090,000	1,932,000	
Fla.	22,547,000	5,881,000	92,931,000	
Ga.	2,972,000	1,130,000	16,331,000	
Ky.	1,033,000	2,875,000	6,612,000	
La.	6,457,000	83,005,000	28,128,000	
Md.	5,787,000	2,425,000	15,036,000	
Miss.	788,000	2,425,000	11,106,000	
Mo.	5,116,000	3,393,000	9,717,000	
N. C.	3,216,000	1,670,000	25,610,000	
Okla.	6,051,000	3,618,000	23,121,000	
S. C.	9,483,000	10,218,000	24,565,000	
Tenn.	3,604,000	150,935,000	29,664,000	
Tex.	27,151,000	36,257,000	134,850,000	
Va.	1,686,000	945,000	25,151,000	
W. Va.			60,000	
TOTAL	\$98,515,000	\$333,039,000	\$452,693,000	

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(Continued from page 54)
restore coke production to normal, which will be done at the same time the blast furnace work is started.

"As quickly as possible," he states, "in the light of what we are able to do with iron production in the blast furnaces, we will start open hearths in proportion to the iron we can get. Next will come the primary mills and semi-finishing operations. As to the finishing mills, their resumption will depend upon what goes on ahead in the furnaces and other preceding operations. Also, several major repair jobs which we were unable to do during the strike must now be done before some of our manufacturing departments can resume."

Two views on costs were issued at the beginning of July. Both recorded increases—the first one point during the second quarter of the year and the other six points in the same period after a rise of five points in the preceding three months.

Industrial building costs, according to the Austin Company, advanced to 184 in the second quarter, under the impetus of freight rate increases and moderate wage adjustments in the building trades. The

PRIVATE BUILDING

(Assembly, Commercial, Residential, Office)

	July, 1952		Contracts First Seven Months to be Awarded	
	Contracts Awarded	to be Awarded	1952	1952
Ala.	\$1,460,000	\$1,855,000	\$11,382,000	
Ark.			843,000	
D. C.	1,040,000	50,000	6,890,000	
Fla.	6,946,000	6,397,000	71,377,000	
Ga.	3,711,000	1,250,000	38,377,000	
Ky.		1,350,000	4,891,000	
La.	1,493,000	1,750,000	27,953,000	
Md.	3,670,000	1,770,000	36,997,000	
Miss.	334,000	630,000	7,617,000	
Mo.	374,000	14,184,000	5,835,000	
N. C.	1,698,000	780,000	14,373,000	
Okla.		1,640,000	541,000	
S. C.	2,873,000	995,000	14,166,000	
Tenn.	232,000	3,000,000	31,636,000	
Tex.	2,109,000	30,455,000	100,069,000	
Va.	6,045,000	1,750,000	63,166,000	
W. Va.			5,442,000	
TOTAL	\$40,435,000	\$68,076,000	\$489,545,000	

statement was made before the strike ended price increases accompanying the strike settlement will mean the additional costs will be passed along to the consumer.

The American Appraisal Co. announced that its construction cost index rose five points during the first quarter and six points during the second quarter, a total of eleven points or two per cent for the first half of the year. Labor wage increases and higher freight rates accounted for the second quarter rise, it was pointed out.

Chesapeake Bay Bridge Opened to Traffic

(Continued from page 10)

had been collected by the end of the fourth day. Capacity of the structure is placed at 1,500 vehicles per hour in one direction, or 8,500,000 vehicles per year. First estimates of 1,100,000 vehicles to use the bridge yearly have been raised to 1,500,000.

J. E. Greiner & Co., Baltimore, were the consulting engineers for the project, with Bruce Herman, the resident engineer. Contractors included the following:

F. P. Asher, Jr. & Sons, Inc.; Baltimore Contractors, Inc.; Bethlehem Steel Co., for the superstructure; Blumenthal-Kahn Electric Co., Inc.; Booth & Flinn Co.; Carnegie-Illinois Steel Corp.; Construction Aggregates Corp.; C. J. Langenfelder & Son, Inc.; Merritt-Chapman & Scott Corp.; Millison Construction Co.; Raymond Concrete Pile Co.; Shanahan Artesian Well Co.; John D. Sheetz Construction Co.; Frederick Snare Corp.; J. Rich Steers, Inc.; Tallier & Cooper, Inc.; Nellie L. Teer Co., and Tidewater Construction Co.

Water work for the bridge started November 3, 1949, with arrival of the dredge Arlington, which made a new channel for the bay ferries. The high tower derrick, the first equipment used by Bethlehem Steel Co., contractors for the superstructure, was brought to the scene in September, 1950.

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Public Health Service Reports on Sewers

(Continued from page 33)

Maryland—Sandy Point, project, new plant, \$29,194; Breathesville Reformatory, project, new plant, \$90,275;

Mississippi—Biloxi, Keesler Air Force Base, project, new plant, \$376,844; Hollandale, 2,340, new plant, \$90,547;

Missouri—Independence, 36,963, new plant, \$902,268; Kirkwood, 18,640, additions, \$23,066;

North Carolina—Albemarle, 11,798, additions, \$305,051; Charlotte, 134,042, enlargement, \$1,536,940;

Oklahoma—Newkirk, 2,201, new plant, \$20,089; Quay (Public School), 200, new plant, \$2,000; Weleetka, 1,548, new plant, \$53,672;

Tennessee—Cookeville, 6,924; new plant, \$15,824;

Texas—Calvert, 2,561, replacement, \$31,086; Corpus Christi, 108,287, enlargement, \$234,868; Garland, 10,291, new plant, \$376,000; Harris County, project, new plant, \$39,882; Haskell, 3,832, replacement, \$44,058; Laredo Municipal Airport, project, new plant, \$263,205; Mansfield, 960, replacement, \$18,425; Overton 2,002, additions, \$2,000; Seadrift, 548, additions, \$10,036; Weslaco, 7,487, replacement, \$158,507; DeKalb, 1,915, replacement, \$43,000;

Virginia—Beaumont, Va., (Industrial School), project, new plant, \$25,974.

Oklahoma Lets Contracts

(Continued from page 41)

Mayes, Delaware, Rogers and Tulsa Counties—MC-327(1), painting seven bridges, estimate, \$39,750; low bidder, Jack Frank, \$33,932;

Osage, Washington, Tulsa and Creek Counties—MC-328(1), painting 12 bridges, estimate, \$39,500; low bidder, Floyd Winans, \$29,408;

Coal, Hughes, Johnston, McClain, Murray and Pontotoc Counties—MC-329(1), painting 21 bridges, estimate, \$18,425; low bidder, Randall H. Sharpe, Chickasha, \$15,525;

Cleveland, Hughes, Okfuskee, Pottawatomie and Seminole Counties—MC-330(1), painting 25 bridges, estimate, \$30,335; low bidder, Randall H. Sharpe, \$25,440;

Ellis, Woods, Alfalfa and Major Counties—MC-331(1), painting 22 bridges, estimate, \$18,000; low bidder, Floyd Winans, \$13,332;

Caddo, Comanche, Grady and Jefferson Counties—MC-332(1), painting 9 bridges, estimate, \$17,050; low bidder, Randall H. Sharpe, \$14,728.

Military Construction Set at \$3,027,752,000

(Continued from page 37)

Fort Worth, \$15,844,000; Tye Field, Abilene, \$32,273,000; Majors Field, Greenville, \$23,000; Galveston Municipal Airport, Galveston, \$6,269,000; Big Spring Air Force Base, Big Spring, \$6,270,000; Bryan Air Force Base, Bryan, \$3,791,000; Ellington Air Force Base, Houston, \$4,787,000; Foster Field, Victoria, \$5,129,000; Goodfellow Air Force Base, San Angelo, \$3,741,000; Harlingen-All-Valley Municipal Airport, Harlingen, \$11,488,000; James Connally Air Force Base, Waco,

\$7,829,000; Laredo Municipal Airport, Laredo, \$4,943,000; Laughlin Air Force Base, Del Rio, \$4,958,000; Moore Field, Mission, \$10,858,000; Berrin Air Force Base, Sherman, \$4,016,000; Randolph Air Force Base, San Antonio, \$5,686,000; Reese Air Force Base, Lubbock, \$8,000,000; Kelly Air Force Base, San Antonio, \$8,239,000; Brooks Air Force Base, San Antonio, \$8,000,000;

VIRGINIA

Army—Fort Belvoir, Alexandria, \$3,577,000; Fort Eustis, Newport News, \$3,233,000; Camp Pickett, Blackstone, \$142,000; Vint Hill Farms, Warrenton, \$341,000;

Navy—Naval Amphibious Base, Little Creek, \$3,279,000; Naval Base, Norfolk, \$5,417,000; Naval Degaussing Station, Norfolk, \$2,000,000; Naval Hospital, Norfolk, \$12,664,000; Naval Supply Center Norfolk, Cheatham Annex, \$852,000; Marine Corps Schools, Quantico, 163,000; Naval Ammunition Depot, St. Juliens Creek, \$326,000; Naval Mine Depot, Yorktown, \$630,000;

DISTRICT OF COLUMBIA

Army—Army Map Service, D. C., \$846,000; Walter Reed Army Medical Center, D. C., \$731,000;

Navy—Naval Research Laboratory, Anacostia, D. C., \$500,000;

Air Force—Bolling Air Force Base, \$707,000.

Big Steel Bulkhead Built at Florida Carrier Base

(Continued from page 37)

knocks the sand from under the pile, allowing it to settle deep into the ground. When more solid strata of earth were reached, steam hammers pounded the pieces down to their maximum depth.

Once the piling was set into place, it was anchored permanently by connection to a "dead man." Not so gruesome as it sounds, this is a massive, continuously cast concrete structure which is set underground and encircles the basin some distance behind the bulkhead. Steel tie rods join the bulkhead to the concrete form.

To complete the job, a heavy concrete casement is being cast around the top edge of the bulkhead. The banks behind the casement are being filled in with sand, making a flat, smooth approach to the harbor from all angles. For all its size, the basin will be as neat and tight as a bathtub.

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ALBERT PIPE SUPPLY COMPANY, INC.			—		G. M. CORP.—DETROIT DIESEL ENG. DIV.			—		PARK TRACTOR CO., GEORGE			—	
Agency—H. N. Buchanan Co.			—		Agency—Kudner Agency, Inc.			—		(S State Group)			—	
ALLIS-CHALMERS TRACTOR DIV.			9		GENERAL SUPPLY & EQUIP. CO.			17		PARSONS CO. (N State Group)			—	
Agency—Bert S. Gittins			—		(N State Group)			—		Agency—Andrews Agency, Inc.			—	
AMERICAN BRIDGE DIV., U. S. STEEL CO.			7		GIBBS CORP. (S State Group)			18B, 18C		PATENT SCAFFOLDING CO.			—	
Agency—Batten, Barton, Durstine & Osborn			—		Agency—Hosler Advertising, Inc.			—		Agency—Glenn-Jordan-Stoetzel, Inc.			—	
AMERICAN CREOSOTING CO.			2		GLAZER STEEL CORP.			57		PENNSYLVANIA DRILLING COMPANY			56	
Agency—Russell T. Gray, Inc.			—		GORMAN-RUPP CO.			—		Agency—Edward M. Power Co., Inc.			—	
AMERICAN STEEL & WIRE DIV.			—		Agency—Coleman Todd & Associates			57		PITTMAN TRACTOR CO., J. D.			18B, 18C	
Agency—Batten, Barton, Durstine & Osborn			—		GRAY CONCRETE PIPE COMPANY			—		(S State Group)			—	
AMERICAN STEEL DREDGE COMPANY			56		GREGORY-POOLE EQUIP. CO.			15		POWER EQUIP. CO. (C State Group)			14	
Agency—Willis S. Martin			—		(C State Group)			—		POWER EQUIP. CO. (S State Group)			18N	
ARUNDEL CORP.			—		Agency—Hosler Advtg. Inc.			—		—			—	
ATLANTIC STEEL CO.			—		—			—		—			—	
Agency—Lowe & Stevens			—		—			—		—			—	
AUSTIN-WESTERN COMPANY			60		—			—		—			—	
Agency—The Advertising Corp.			—		—			—		—			—	
AUTOLINE OIL CO. (N State Group)			13		—			—		—			—	
Agency—Batten, Barton, Durstine & Osborn			—		—			—		—			—	
—B—														
BARBER-GREENE CO.			13, 17		—			—		—			—	
(C State Group)			—		—			—		—			—	
(N State Group)			15, 18A		—			—		—			—	
(S State Group)			17, 18G		—			—		—			—	
(W State Group)			13, 17		—			—		—			—	
Agency—The Buchen Co.			—		—			—		—			—	
BIRMINGHAM SLAG CO. (S State Group)			18B		—			—		—			—	
Agency—Parker Luckie & Associates			—		—			—		—			—	
BLALOCK MACHINERY & EQUIP. CO.			18H, 18J		—			—		—			—	
(S State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
BUCYRUS-ERIE			—		—			—		—			—	
Agency—Bert S. Gittins			—		—			—		—			—	
BURFORD-TOOTHAKER TRACTOR CO.			18B, 18C		—			—		—			—	
(S State Group)			—		—			—		—			—	
Agency—Hosler Advertising, Inc.			—		—			—		—			—	
—C—														
CARLTON CO. (S State Group)			18B, 18C		—			—		—			—	
Agency—Hosler Advertising, Inc.			—		—			—		—			—	
CAROLINA CONCRETE PIPE CO.			—		—			—		—			—	
(C State Group)			—		—			—		—			—	
CAROLINA TRACTOR & EQUIP. CO.			15		—			—		—			—	
(C State Group)			—		—			—		—			—	
Agency—Hosler Advertising, Inc.			—		—			—		—			—	
CLEVELAND TRENCHER COMPANY			47		—			—		—			—	
Agency—Gates-Bourgeois			—		—			—		—			—	
COLUMBIA-GENEVA STEEL DIV.			—		—			—		—			—	
Agency—Batten, Barton, Durstine & Osborn			—		—			—		—			—	
CONCRETE SURFACING MACHINERY CO.			5		—			—		—			—	
CONNORS STEEL CO. (S State Group)			13		—			—		—			—	
(S State Group)			—		—			—		—			—	
Agency—Parker Luckie & Associates			—		—			—		—			—	
CONSTRUCTION EQUIPMENT CO.			18P		—			—		—			—	
(S State Group)			—		—			—		—			—	
CONSTRUCTORS SUPPLY CO., INC.			—		—			—		—			—	
(C State Group)			—		—			—		—			—	
CRAYEN CO., E. F. (C State Group)			18B		—			—		—			—	
Agency—Bradham & Co.			—		—			—		—			—	
CUMBERLAND PORTLAND CEMENT CO.			6		—			—		—			—	
Agency—George H. Hartman Co.			—		—			—		—			—	
—D—														
DALTON SUPPLY CO.			57		—			—		—			—	
(S State Group)			—		—			—		—			—	
DEATHERAGE & SON, GEO. E.			56		—			—		—			—	
(S State Group)			—		—			—		—			—	
DEMPSTER BROTHERS, INC.			18H, 18J, 18K		—			—		—			—	
(S State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
DETROIT DIESEL ENGINE DIV.—G. M. Corp.			—		—			—		—			—	
Agency—Kudner Agency, Inc.			—		—			—		—			—	
DICKY CLAY MANUFACTURING CO., W. S.			53		—			—		—			—	
Agency—Robertson & Buckley, Inc.			—		—			—		—			—	
DIETRICH BROS., INC. (N State Group)			—		—			—		—			—	
(C State Group)			—		—			—		—			—	
Agency—H. W. Buddemeier Co.			—		—			—		—			—	
DORSEY TRAILERS			—		—			—		—			—	
Agency—Morris Timbes Advertising, Inc.			—		—			—		—			—	
—E—														
EASTERN CAROLINA ENGR. CO.			57		—			—		—			—	
ECONOMY FORMS COMPANY			5		—			—		—			—	
Agency—The Blakemore Company			—		—			—		—			—	
ELPHINSTONE, INC. (N State Group)			18D		—			—		—			—	
—F—														
FLECO CORP.			—		—			—		—			—	
FLORIDA EQUIPMENT CO.			18H, 18J		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
FOOTE COMPANY, INC.			44, 45		—			—		—			—	
Agency—Russell T. Gray, Inc.			—		—			—		—			—	
—G—														
GALION IRON WORKS & MFG. CO.			27		—			—		—			—	
Agency—Morgan Advertising Co.			—		—			—		—			—	
GARDNER-DENVER COMPANY			8		—			—		—			—	
Agency—The Buchen Company			—		—			—		—			—	
GENERAL EXCAVATOR CO.			—		—			—		—			—	
Group C			—		—			—		—			—	
Group N			—		—			—		—			—	
Group S			—		—			—		—			—	
Group W			—		—			—		—			—	
Agency—Howard Swink Advtg. Agency			—		—			—		—			—	
—H—														
HARNISCHFGER CORPORATION			59		—			—		—			—	
Agency—The Buchen Company			—		—			—		—			—	
HARRIS, INC., R. L. (S State Group)			18B, 18C		—			—		—			—	
Agency—Hosler Advertising, Inc.			—		—			—		—			—	
HERMITAGE PORTLAND CEMENT CO.			43		—			—		—			—	
Agency—George H. Hartman Co.			—		—			—		—			—	
HOOPER EQUIPMENT CO. (W State Group)			15		—			—		—			—	
Agency—Lowe Runkle Co.			—		—			—		—			—	
HUBER MANUFACTURING COMPANY			—		—			—		—			—	
Agency—Jay H. Maish Company			—		—			—		—			—	
HUNT & SONS, J. B. (C State Group)			15		—			—		—			—	
HUNT MACHY. CO., JEFF (C State Group)			15		—			—		—			—	
HUNT OIL CO. (S State Group)			15		—			—		—			—	
—I—														
INDEPENDENT PNEUMATIC TOOL CO.			—		—			—		—			—	
Agency—Connor & Watson			—		—			—		—			—	
INTERNATIONAL HARVESTER CO.			22, 23		—			—		—			—	
Agency—Leo Burnett Co., Inc.			—		—			—		—			—	
—J—														
JOHNSON CO., C. S. (N State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
—K—														
KOEHRING CO., INC. (N State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
KOPPERS CO., INC. (W State Group)			18		—			—		—			—	
Agency—Batten, Barton, Durstine & Osborn			—		—			—		—			—	
KRUEPER CO., H. J.			—		—			—		—			—	
Agency—Clyde D. Graham			—		—			—		—			—	
KWIK-MIX CO. (N State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
—L—														
LACLED STEEL COMPANY			—		—			—		—			—	
Agency—Batz-Hodgson-Neuwoehner Advtg. Agency			—		—			—		—			—	
LeTOURNEAU, INC., R. G.			17		—			—		—			—	
(N State Group)			—		—			—		—			—	
(C State Group)			18A		—			—		—			—	
(S State Group)			18H, 18J		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
LITTLEFORD BROS., INC.			—		—			—		—			—	
Agency—Jaap-Orr Co.			—		—			—		—			—	
LOUIS CO., INC., JOHN C.			14		—			—		—			—	
(N State Group)			—		—			—		—			—	
LUCY BOILER & MFG. CORP.			51		—			—		—			—	
Agency—Gibbons Advertising Agency, Inc.			—		—			—		—			—	
—M—														
M & G ARMATURE & GENERATOR SERVICE, INC. (N State Group)			18		—			—		—			—	
MARION POWER SHOVEL CO.			—		—			—		—			—	
Agency—Jay H. Maish Co.			—		—			—		—			—	
MASON & BACON CO.			57		—			—		—			—	
Agency—H. W. Buddemeier Co.			—		—			—		—			—	
MCGHAT PATENT SCAFFOLDING CO.			18C		—			—		—			—	
(N State Group)			—		—			—		—			—	
MINE & CONTRACTORS SUPPLY CO.			18D		—			—		—			—	
(S State Group)			—		—			—		—			—	
MITCHELL DISTRIBUTING CO.			18A		—			—		—			—	
(C State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
MOTT CORE DRILLING COMPANY			56		—			—		—			—	
—N—														
NORTHWEST ENGINEERING COMPANY			3		—			—		—			—	
Agency—Russell T. Gray, Inc.			—		—			—		—			—	
—O—														
OCONEE CLAY PRODUCTS CO.			18C		—			—		—			—	
(C State Group)			—		—			—		—			—	
(S State Group)			18A		—			—		—			—	
OLIVER CORPORATION, INDUSTRIAL DIV.			31		—			—		—			—	
Agency—The Buchen Company			—		—			—		—			—	
OSGOOD CO. (C State Group)			—		—			—		—			—	
(N State Group)			—		—			—		—			—	
(S State Group)			—		—			—		—			—	
(W State Group)			—		—			—		—			—	
Agency—Howard Swink Advtg. Agency			—		—			—		—			—	
OWSLEY & SON, INC., H. B. (C State Group)			12		—			—		—			—	
—P—														
PARK TRACTOR CO., GEORGE			—		—			—		—			—	
(S State Group)			—		—			—		—			—	
PARSONS CO. (N State Group)			—		—			—		—			—	
Agency—Andrews Agency, Inc.			—		—			—		—			—	
PATENT SCAFFOLDING CO.			—		—			—		—			—	
Agency—Glenn-Jordan-Stoetzel, Inc.			—		—			—		—			—	
PENNSYLVANIA DRILLING COMPANY			56		—			—		—			—	
Agency—Edward M. Power Co., Inc.			—		—			—		—			—	
PITTMAN TRACTOR CO., J. D.			18B, 18C		—			—		—			—	
(S State Group)			—		—			—		—			—	
Agency—Hosler Advertising, Inc.			—		—			—		—			—	
POWER EQUIP. CO. (C State Group)			14		—			—		—			—	
POWER EQUIP. CO. (S State Group)			18N		—			—		—			—	
—Q—														
"QUICK-WAY" TRUCK SHOVEL CO.			4		—			—		—			—	
Agency—Galen E. Broyles Co., Inc.			—		—			—		—			—	
—R—														
RISH EQUIPMENT CO. (N State Group)			—		—			—		—			—	
ROSCO MFG. CO. (N State Group)			16		—			—		—			—	
Agency—Foulke Agency, Inc.			—		—			—		—			—	
—S—														
SALEM GENERAL														

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It's the most advanced dragline in the 1½-yard class . . . with power aplenty . . . extra stability . . . and line pulls to match.

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Watkins-Aldridge Equipment Co., Inc.
912 South State Street

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J. B. Hunt & Sons, Inc.
323 W. Martin Street

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Industrial Equipment Co., Inc.
of South Carolina
East Liberty & Boulevard Sts.

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Brooks Equip. & Mfg. Co.
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Jes McNeel Machinery Corp.
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EL PASO, Texas
Tri-State Equipment Co.
1401 Paisano Drive

HOUSTON 1, Texas
R. B. Everett & Co.
3118 Harrisburg Blvd.

LUBBOCK, Texas
Plains Machinery Company
Plainview Cutoff & College Ave.

ODESSA, Texas
Plains Machinery Company
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Jes McNeel Machinery Corp.
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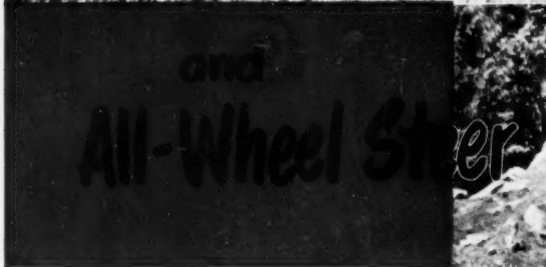
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